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BRANCH OF THE
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THE NEWSPAPER OF THE INDUSTRY

AIR CONDITIONING AND

WRITTEN TO BE READ ON ARRIVAL

REFRIGERATION NEWS

Established 1926 and Registered U. S. Patent Office as Electric Refrigeration News
Member Audit Bureau of Circulations. Member Associated Business Papers.

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Air Conditioner January Orders Hit $4,874,223

Manufacturers' Sales to Outlets Double Those For January, 1936

WASHINGTON, D. C.—Orders for air-conditioning systems and equipment booked during January by 125 manufacturers totaled $4,874,223, double those for the same month last year, and an increase of 10.8% over the $4,399,693 reported by 98 manufacturers during December, 1936, according to figures released by Director William L. Austin of the Bureau of the Census.

The statistics are grouped into three sections, the first covering air-conditioning systems, air washers, filters, and humidifiers; the second, fans; and the third, unit heaters.

The air-conditioning group led during the month, orders totaling $2,635,849, compared with $2,085,951 during December and $981,661 during January of last year.

Central station systems for human comfort booked during January were valued at $849,280, compared with $323,484 in December, and $308,142 in January, 1936. Central station systems of the industrial type totaled $73,412 during the month, against $416,564 in December and $78,706 in January of last year.

Self-contained systems valued at $448,985 were booked during the month, and systems not self-contained at $651,713. Figures for December totaled $272,850, for self-contained systems, and $750,591 for those not self-contained.

Orders for refrigerating systems sold to contractors for installation in air-conditioning systems reached a new high for the month, going to $356,408 against a mark of $185,089 last January, and of $94,451 during December. Air washer orders were down from their December figure, totaling $75,350 against $78,239, but were well over the $40,784 reported for last January.

Humidifier orders rose to $164,399, from a December total of $135,468, and a January, 1936, mark of $88,931.

Modern Equipment Co. Announces Line of 6 Commercial Models

DEFIANCE, Ohio — The Modern Equipment Corp. of this city is introducing, as its first products for the refrigeration field, a line of commercial refrigeration compressors, in a complete range of highsides from ¼ to 10 hp., which will be marketed under the trade-name "Par."

The Modern Equipment Corp. was incorporated in June, 1935, and acquired at that time a modern manufacturing plant here which has a total floor area of 60,000 square feet, all on one floor.

More than a year ago the firm introduced a line of automobile lifts and automotive service station air compressors. The company also started an experimental program on refrigeration equipment which has resulted in the current announcement of a commercial refrigeration line of six compressors—three 2-cylinder models and three 4-cylinder models—with a range of highsides from ¼ to 10 hp.

W. C. Allen is vice president in charge of sales for Modern Equipment Corp., and M. H. Pendergast is in charge of engineering. Both men are refrigeration industry veterans. They had been with Brunner Mfg. Co. just preceding their connection with Modern Equipment Corp.

The new units are available with either methyl chloride or Freon as the refrigerant.

Par compressors are of the crank

(Concluded on Page 6, Column 2)

N.Y. Court Upholds State Regulation Of Price Fixing

ALBANY, N. Y.—The Feld-Crawford Fair Trade Law, which permits manufacturers to fix by contract the retail price of their trade-marked merchandise in New York State, has been upheld as constitutional by the New York State Court of Appeals.

In upholding the act, the court reversed its previous position (taken in the case of Doubleday, Doran & Co. vs. R. H. Macy & Co.), in view of recent U. S. Supreme Court rulings sustaining similar legislation in California and Illinois. Current action was in the case of Bourjois Sales Corp., Brooklyn, to prohibit a Brooklyn druggist from selling its cosmetics below contract prices.

Section 1 of the New York act empowers the manufacturer of a

(Concluded on Page 2, Column 3)

Peerless Opens New Chicago Factory

CHICAGO—A fourth United States factory was recently opened in Chicago by Peerless of America, Inc., to accommodate its household evaporator and valve departments. Site of the new factory is at 544 W. 35th St., directly across the street from the main Peerless plant.

The 10,000 sq. ft. of floor space afforded the two departments in the new location has made possible installation of new machinery and employment of additional labor. Household evaporator production has increased 400% and valve output doubled.

Room vacated by these two departments in the main factory is being devoted to manufacture of commercial coils, unit coolers, and air-conditioning equipment.

Supply Jobbers Group Now Has Eighty Members

Other Applications on File; Canadian and Hawaiian Firms Are Members

DETROIT—Membership in the National Refrigeration Supply Jobber's Association now numbers 80 companies, Frank J. Gleason, secretary of the organization, reports. Applications of about a dozen additional companies for membership in the association are under consideration.

In addition to firms in the United States, the organization's current membership list includes jobber companies in Canada and Hawaii.

Aetna Supply Co., New York City; Airo Supply Co., Chicago; Allied Refrigeration Parts, Inc., Dayton; Harry Alter Co., Chicago; Automatic Heating & Cooling Supply, Chicago; Berner-Pease, Inc., Miami, Fla.; T. W. Binder Co., Newark; H. W. Blythe Co., Chicago; A. E. Borden, Boston.

Borg-Warner Service Parts, Chicago; Brass & Copper Sales Co., St. Louis; Briggs Weaver Machinery Co., Dallas, Texas; Bristol Supply Co., St. Joseph, Mo.; Burstein-Applebee Co., Kansas City, Mo.; California Refrigerator Co., San Francisco; H. Channon Co., Chicago; Geo. Dehler, Jr. & Co., Louisville, Ky.

Enochs Sales Co., New Orleans, La.; Forslund Pump & Machinery Co., Kansas City, Mo.; General Refrigeration Supply, Allentown, Pa.; Globe Machinery & Supply Co., Des Moines, Iowa; Heat & Power Engineering Co., Toledo; Hinshaw Supply Co., Sacramento, Calif.; Home Appliance Service Co., Greensboro, N. C.; Hughes-Peters Electric Corp., Columbus, Ohio; Interstate Machinery Supply Co., Omaha, Neb.

F. H. Langsenkamp Co., Indianapolis; Gustave A. Larson Co., Madison, Wis.; Lewis Supply Co., Memphis, Tenn.; D. C. Lingo Co., Houston, Texas; Lowe Electric Co., Macon, Ga.; Machine Tool & Supply Co., Tulsa, Okla.; M & E Refrigeration Accessory Co., Philadelphia; Melchior, Armstrong, Dessau Co., New York City; Merkel Bros. Co., Cincinnati; Motor Supply Co., Monroe, La.; Macklanburg Brass &

(Concluded on Page 23, Column 3)

Kelvinator Will Market Parts Through Independent Jobbers

Firms Which Adhere to Association's Policies Will Be Preferred

DETROIT—Kelvinator Division of Nash-Kelvinator Corp. last week announced that it would sell parts for its refrigeration equipment through independent refrigeration supply jobbers.

Franchises to distribute "Authorized Genuine Kelvinator Parts" will be awarded to jobbers in each city. In awarding the franchises, the company will give preference to jobbers operating in accordance with standards set up by National Refrigeration Supply Jobber's Association.

Changing business conditions and requests from jobbers in various parts of the country are responsible for the change in its parts distribution policy, the company announced. Selling through jobbers will provide wider distribution and make it easier for service men to obtain genuine Kelvinator parts, it was pointed out.

Kelvinator's action represents a departure from the policy to which most of the major manufacturers have adhered. Last year Frigidaire began selling parts to independent service men, but distribution was maintained through its own distributors. Kelvinator has now taken the further step of making its parts available to independent service men through independent supply jobbers.

'Meter-Miser' Featured On Back of Yellow Cabs in Cleveland

CLEVELAND—Frigidaire is using a type of promotion new to this territory in its spring refrigeration campaign. Advertisements featuring the "Meter-Miser" are being carried on the spare tire covers of all Yellow and Zone taxicabs in the city.

In another departure from traditional practices, it has been suggested that the Electrical League set up tents in various sections of the city in connection with its annual spring refrigeration campaign, so that prospects may inspect all makes of appliances in their own neighborhoods, without having to go downtown to a central showroom. No definite decision has been made.

Air Conditioning Group Formed at South Bend

SOUTH BEND, Ind.—The Air Conditioning and Automatic Heating Association of Northern Indiana was organized March 12 at a meeting in LaSalle Hotel here. Officers are R. H. Clymer, South Bend, president; F. S. Kelly, Mishawaka, vice president; George Miller, South Bend, secretary-treasurer.

On the board of directors, representing different groups within the association, are W. W. Jones, oil burners; Edward Miller, stokers; and Carl C. Wilcox, air conditioning.

The association will cooperate with manufacturers of air-conditioning and automatic heating equipment in an educational campaign in northern Indiana and southern Michigan markets, Mr. Clymer said.

Charles B. O'Hare, South Bend, is chairman of the committee on publicity and advertising.

Figures on 1936 Sales In Dayton & Cincinnati Released by Utility

NEW YORK CITY—Independent electrical appliance dealers in the Dayton and Cincinnati territories sold 35,410 refrigerators during 1936, according to figures released by Columbia Gas & Electric Corp. for its operating subsidiaries, Dayton Power & Light Co. and Cincinnati Gas & Electric Co.

Dealers in the Dayton territory sold 6,696 refrigerators at a value of $870,480, while dealers in the Cincinnati area sold 28,714 refrigerators at a value of $4,735,265. Other appliance sales by dealers in these areas follow: Dayton—15,208 radios valued at $456,240, and 7,937 washers at a value of $396,850; Cincinnati—60,000 radios at $3,300,000, and 16,000 washers at $1,200,000.

Retail activities of Dayton Power & Light Co. during 1936 resulted in appliance sales with a total dollar volume of $76,397, compared to the volume of $2,493,691 for the 105,637 electric appliances sold by dealers in the territory. Cincinnati Gas & Electric Co. sold somewhat over $820,000 worth of appliances during 1936, compared to $11,400,715 of electric appliances sold by dealers. The Cincinnati utility reports that over 50% of its customers have installed electric refrigerators.

Approximately 282 miles of rural lines were constructed by the Dayton utility last year, resulting in the addition of 1,512 rural customers. Cincinnati Gas & Electric Co. constructed a total of 226 miles of rural lines during 1936, adding 921 rural customers.

Jones Again Secretary Of Cleveland League

CLEVELAND—Ralph H. Jones has been reelected secretary of the Electrical League of Cleveland after a six months' leave of absence from that position. At the most recent meeting of the League's board of directors, Mr. Jones was also appointed assistant treasurer of the cooperative group.

Bring 'Em Back Alive!!

G. Earle Walker, Merchandise Manager, Crosley Radio Corp., Tells Distributors How Dramatized Sales Records Can Increase Sales Volume and Dealer Coverage . . .

pages 20 and 21.

For further useful reports on today's selling methods see stories under the headings, "How Successful Dealers Operate" on page 24, and "Department Stores," page 4.

Dayton League Admits Gas Appliance Dealers

DAYTON — The former Electric League of Dayton changed its name to the Gas and Electric League of Dayton and admitted retailers of gas refrigerators and appliances to membership at a meeting on Mar. 12.

Plans for a mid-summer gas and electric appliance show were discussed, and Kenneth Chase of the Cappel Co. was named chairman of the arrangements committee.

Past officers of the Electric League were retained by the new association. They are: Paul Kemper, Rossiter-Jarrett Co., president; George Schumacher, Harten & Knodel Distributing Co., vice president; Kenneth Chase, the Cappel Co., treasurer; Brooks Harmon, Dayton Retail Merchants Assn., secretary.

Copeland Opens Sales Branch in New York

NEW YORK CITY—Copeland Refrigerator Corp. recently opened a sales branch at 1709 Broadway Ave. here. According to I. W. Pelton, New York branch manager, the firm is now appointing new dealers in this area.

Industry to Suggest Appliances as Gifts For 5th Anniversary

NEW YORK CITY—Gifts of electrical appliances instead of woodenware for fifth wedding anniversaries—that's the design back of a cooperative campaign planned for May and succeeding months by National Electrical Manufacturers Association and Edison Electric Institute.

Tentative program calls for joint promotion by manufacturers and utility companies, consumer advertising, and direct dealer contact with couples about to celebrate their fifth wedding anniversaries.

Another cooperative activity, aimed at the "June wedding" market, is Electrical Gift Month, planned for June. Activities for the month are being built around electrical table appliances as wedding gifts for the modern bride. National advertising includes a two-page color spread in May "House Beautiful" and in the Buying Guide for the Bride, with prizes for best advertising by dealers.

'36 Los Angeles Area Sales Total 51,409

LOS ANGELES—Dealer sales of household electric refrigerators in the territory covered by the Southern California Edison Co. totaled 51,409 units in 1936—an increase of 15,886 units over the previous year's sales, reports by the utility show.

Representing a gain of 930 units, 6,575 electric ranges were sold during 1936, against 5,545 in 1935. Gains in water heater sales were also reported.

Berg to Aid von Meyer On Copeland Sales

DETROIT—R. G. Berg, formerly in the order and service department of Copeland Refrigerator Corp., has been appointed assistant to W. G. von Meyer, vice president and sales manager of the company.

Before joining the Copeland organization in March, 1934, Mr. Berg was in the sales department of the Chicago division of Zerozone Refrigeration Co.

Kitchen Bureau Issues Sound Slide Film

NEW YORK CITY—To dramatize the advantages of the modern all-electric kitchen, National Kitchen Modernizing Bureau has brought out "It Can Happen Here," a sound slide film designed for showing before sales and consumer groups, or to an individual in his office or home.

The film traces the experiences of a young bride in showing her husband (and her mother-in-law) how modern equipment eases kitchen drudgery, and how easily installation may be accomplished.

Carolina Norge Outlet Holds Sales Schools

CHARLOTTE, N. C.—Southern Bearings & Parts Co., Inc., Norge distributor for the Carolinas, recently held a series of sales schools in its territory, showing the new line of home appliances and giving sales and merchandising plans for the coming year.

Meetings were held in High Point, N. C., at the Sheraton hotel; Fayetteville, N. C., at the Prince Charles hotel; Columbia, S. C., at the Columbia hotel; and Greenville, S. C., at the Poinsett hotel. Over 500 dealers and salesmen attended the meetings.

— SALES STATISTICS —

New York, Pennsylvania, & California Lead States in Sales for 1936

The sales figures published in last week's issue of the NEWS, under the heading "New York's 12,559 Heads Up December Sales by States," were the figures for the entire year 1936 rather than for December only. Presented below are the sales by states statistics for December, 1936, on the left, and for the entire year, on the right.

States and Territories	Quantity of Household Low Sides
Alabama	1,560
Arizona	271
Arkansas	554
California	11,645
Colorado	638
Connecticut	1,853
Delaware	201
Dist. of Columbia	968
Florida	1,715
Georgia	737
Idaho	373
Illinois	6,677
Indiana	3,049
Iowa	667
Kansas	985
Kentucky	1,725
Louisiana	862
Maine	383
Maryland	2,116
Massachusetts	5,901
Michigan	8,564
Minnesota	1,374
Mississippi	475
Missouri	3,028
Montana	281
Nebraska	987
Nevada	113
New Hampshire	325
New Jersey	5,411
New Mexico	185
New York	12,559
North Carolina	939
North Dakota	198
Ohio	8,009
Oklahoma	1,231
Oregon	1,590
Pennsylvania	9,123
Rhode Island	752
South Carolina	524
South Dakota	268
Tennessee	2,036
Texas	3,774
Utah	577
Vermont	195
Virginia	1,569
Washington	1,460
West Virginia	1,109
Wisconsin	2,557
Wyoming	302
Total United States	**112,119**
Canada	1,610
Other Foreign (Including U. S. Possessions)	11,989
Total for world	**125,718**

States and Territories	Quantity of Household Low Sides
Alabama	21,348
Arizona	5,674
Arkansas	10,835
California	153,608
Colorado	14,002
Connecticut	32,049
Delaware	3,607
Dist. of Columbia	17,856
Florida	28,341
Georgia	31,006
Idaho	8,743
Illinois	138,631
Indiana	53,305
Iowa	27,559
Kansas	22,008
Kentucky	25,220
Louisiana	18,754
Maine	6,793
Maryland	21,189
Massachusetts	74,191
Michigan	97,078
Minnesota	26,674
Mississippi	10,364
Missouri	59,069
Montana	8,378
Nebraska	16,577
Nevada	2,484
New Hampshire	6,021
New Jersey	81,798
New Mexico	3,601
New York	222,327
North Carolina	34,226
North Dakota	3,096
Ohio	124,616
Oklahoma	18,936
Oregon	20,649
Pennsylvania	172,092
Rhode Island	9,618
South Carolina	16,684
South Dakota	4,780
Tennessee	29,136
Texas	75,610
Utah	10,890
Vermont	4,172
Virginia	29,441
Washington	31,348
West Virginia	22,768
Wisconsin	32,267
Wyoming	2,959
Total United States	**1,892,378**
Canada	24,809
Other Foreign (Including U. S. Possessions)	150,070
Total for world	**2,067,257**

N. Y. Court Reverses Self on Price Law

(*Concluded from Page 1, Column 2*)

competitive article bearing his trade mark to fix its resale price, wholesale and/or retail, in intrastate commerce by contracts with local dealers. Section 2 prohibits any other local dealer from wilfully cutting such contract price, even though he has not entered into a contract or is not in competition with a dealer who has.

Under this section, the manufacturer may fix a uniform wholesale and/or retail price for his identified article, and prevent price cutting by giving notice to local non-contract dealers.

The New York decision, hailed as a "decisive victory" in the branded goods field, is expected to play a major part in the merchandising of household appliances.

Upholding of the New York act raises to 27 the number of states having fair trade legislation. Manufacturers and distributors within these states, for the most part, are using their new legal privileges discreetly, apparently feeling that demands for higher mark-ups may so antagonize the consuming public that eventually the laws may be repealed, in addition to stimulating the "private brand" movement.

States now having fair trade legislation include: Arizona, Arkansas, California, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Montana, Nevada, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Agreement Ends 4-Day Strike at Rex Plant

CONNERSVILLE, Ind.—A four-day strike at Rex Mfg. Co., manufacturer of refrigerator cabinets, ended here recently with an agreement which brought employes a wage increase of about 15%, a working week of 47½ hours in place of the previous 50-hour week, and recognition of United Automobile Workers of America as collective bargaining agency for its members, according to C. C. Hull, Rex's president.

Shortly after announcement of the settlement, 1,350 employes returned to work in the company's two plants.

Detrola Presents Line At Detroit Meeting

DETROIT—First public showing of Detrola Refrigeration Corp.'s new line of "Precision-Built" electric refrigerators, announced to the industry last week, was held Saturday, Sunday, and Monday at the Hotel Fort Shelby here. Approximately 1,000 Detrola radio dealers, jobbers, and other interested individuals attended the show.

John J. Ross, president of Detrola Radio & Television Corp. and its new refrigeration division, announced after the show that merchandising of the new line in Michigan will be handled through Detrola radio dealers, with warehousing and service in the Detroit area handled by the company's factory.

The line will be retailed through jobber outlets in other parts of the country. Most of these will be dealers handling the Detrola radio line, Mr. Ross said. Present operations are restricted to assembling of the line at the Detrola plant pending completion of manufacturing facilities. According to present plans, the new line will be placed on the market about Apr. 1.

Factory officials said that a considerable number of orders for the Detrola line had been received from the company's export branches located in 56 foreign countries.

"Plus" size of the four new Detrola models was stressed by factory officials to visitors attending the show, The four models are in 4, 5, 6, and 7-cu. ft. cabinet sizes, known as DG-447, DG-577, DG-677, and DG-777. Tentative retail prices on the line are $129, $179, $199, and $219, respectively.

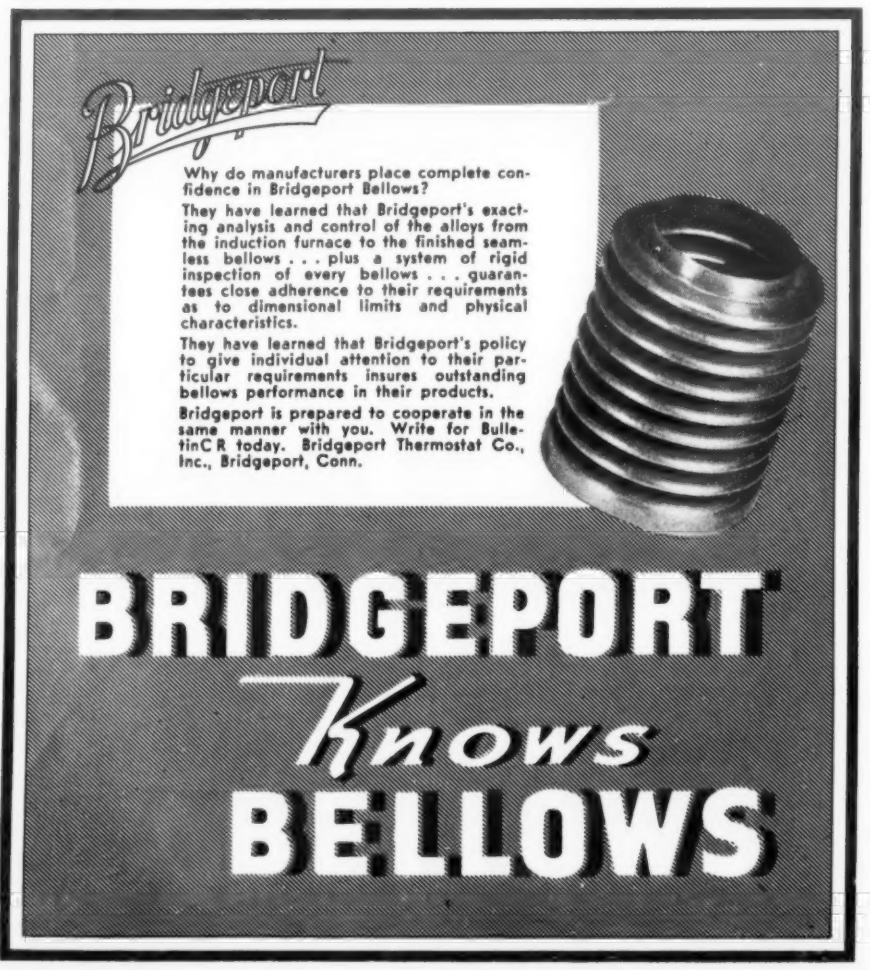
Special Heater Offer Made to Range Users

SAN FRANCISCO—In an attempt to induce electric range users in this territory to heat their kitchens electrically, Pacific Gas & Light Co. is offering to sell range users a 3-kw. Wesix circulating air heater with built-in automatic thermostatic unit for only $29.95. Free installation also is offered and the heating unit may be purchased on payments of $3 per month.

Heating units are connected to the electric range through a 20-amp. porcelain plug and fuse connection. Promotion for the heaters stresses economy of operation, as the heater and range combination brings the user into the lowest bloc of local electric rates.

Grunow Plant Featured in Marion, Ind., Publication

MARION, Ind.—"Greater Marion," official publication of the Greater Marion Association, has devoted the lead article in its February issue to an exposition of the General Household Utilities Co.'s radio plant here.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V-METH-L
FOR Air Conditioning
This 5 H.P. refrigeration unit operates on V-METH-L. Cools and dehumidifies this office building located at West Norfolk, Virginia — in one of the most humid areas of our coastline.
For restaurants, shops, and small office buildings
V-METH-L (Virginia methyl chloride) is an ideal refrigerant for moderate sized air conditioning jobs. Pleasant odor—non-corrosive to copper, brass, iron. Regularly used in flanged copper tube construction. Used with perfect safety up to 2½ lbs. per 1,000 cubic feet of space.
New use of brine in air conditioning
ESOTOO (liquid sulphur dioxide), made by the makers of V-METH-L, can be safely used for air conditioning even with a spray washer, provided an absorbent brine is used. Send for reprint of article describing such use.
Prompt Delivery from 72 Distributing Points
VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

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BUDGET PLAN

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NOTE TO DEALERS: Tie in with C. I. T. to get your full share of the good will C. I. T. advertising and promotion are building for you. Easel-back cards of this design for show window or counter use (16″ x 22″)—also wall or window posters, and other selling aids are available at the C. I. T. local office nearest you. Our 160 local offices are there to help you.

C. I. T. Corporation
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PROTECTS THE TIME BUYER

Neff Defends Public Utility Sale of Home Appliances

JANESVILLE, Wis.—Defense of a public utility's activity in the retail appliance sales field was made here by Grover C. Neff, president of Wisconsin Power and Light Co., before a meeting of 100 salesmen and appliance dealers.

Utilities are forced into the appliance sales field to encourage their customers to use more electricity, Mr. Neff said. They do not hope to make a profit from such sales, but turn back into advertising and general sales promotion more than the gross profit from sales. Wisconsin Power and Light Co. overspent its income from appliance merchandising by more than $14,000 last year, he said.

Both utility and the dealers profit by working together, Mr. Neff said, in the promotion of appliance sales.

Six New Fairbanks-Morse Dealers Named in Dayton

DAYTON—Six new dealers and a local service manager have been appointed by Appliances, Inc., local Fairbanks-Morse distributor, according to Clyde Graham, division manager. Carl Geiger is the new service manager for the Dayton area. New dealers and their locations and managers follow:

Bond Furniture Co., Middletown, managed by Lotta Riley; Willman Furniture Co., Urbana, managed by Beacher Willman; Walter E. Baumgardner Co., Sidney, managed by Walter and Ralph Baumgardner; Walter E. Baumgardner Co., Piqua, managed by W. H. Brelsford; Atlas Gas & Service Co., Piqua, managed by O. O. Millhouse; Variety Gift Shop, Mechanicsburg, managed by H. C. Grubbs.

– DEPARTMENT STORE NEWS –

Erb of Wanamaker's Deplores Attitude Of Manufacturers towards Policies Of Fly-by-Night Dealerships

By T. T. Quinn

PHILADELPHIA—"There's lots of 'sugar' in the electric refrigeration business—and the worst thing that can happen to a store, as well as to an individual, is a diabetic condition.

"A good many stores have thrown their electrical appliance department out the window, and many more will do the same thing—simply because there's too much 'sugar' in it."

These are the words of a man who has had more than 20 years' experience in handling the merchandising of electrical appliances for department stores—Walter Erb, head of the appliance department of Wanamaker's department store here.

"Sugar" is Mr. Erb's general term for malpractices in the appliance merchandising business—evils which, to use his own expression, make the business "fraught with difficulties" for all legitimate operators, individuals and department stores alike.

MAKER'S RESPONSIBILITY

Responsibility for this condition Mr. Erb lays at the door of refrigerator manufacturers, who in their zeal for volume pay little or no attention to the methods by which their products are sold.

"All the manufacturer cares about," Mr. Erb says, "is to sell his merchandise, and lots of it. What happens to it after it leaves his hands is, apparently, no concern of his. Instead of accepting what must, in the end, be his responsibility—seeing that profit margins are maintained and product and service followed through—the manufacturer seems content merely with getting as many units as possible into the field, and then proceeding to forget about them as quickly as he can, letting sales come when and however they may.

"As a result, there are in the field today too many dealers who, operating out of backyard showrooms or, in extreme cases, the back seat of their automobiles—if they have automobiles—have neither price nor profit standards to maintain. And nothing is being done about it.

PROFIT NECESSARY

"Big stores, those with a reputation of years' standing in the community, must either make a fair profit or drop out of the field altogether.

"With us, the appliance department is only a part of the whole store, and we have to maintain our profit margins for the store as a whole. We are interested in our employes' welfare—in seeing that all the men and women who work for us are able to live decent, normal lives. To do this, all departments must make a profit, if the store is to finish its fiscal year out of the red.

"We can't afford to split commissions with the customer, as many so-called 'dealers' do. We have problems of overhead, about which some of these dealers never heard. Our word, when we give it, must be carefully kept. We're here always—not out of business overnight, and so we have to operate all our departments accordingly.

"If we once lose reputation for fair dealing, in just one little affair, the word-of-mouth blame would damage the whole store. This applies not only to the sale, but to servicing as well."

SERVICE POLICY

The store leaves servicing to independent companies and to distributors. For a flat fee of $6.50, installation and five-year servicing on all units is taken care of. The $1.50 covers installation and a primary checkup later to see that the unit is working properly. An additional $5 covers the guarantee period.

This method has proved advantageous, in Mr. Erb's opinion, because the service company can give 24-hour service, something the department store couldn't easily do.

Wanamaker handles General Electric, Kelvinator, Norge, Gibson, Westinghouse, Frigidaire, Electrolux, and Coolerator ice refrigerators. The sales staff has been reduced to four men, who work only inside the store, relying for their leads upon prospects brought in by the store's advertising and floor traffic alone.

SPECIAL TERMS OUT

"We had 18 months of FHA terms, meter plan selling, outside sales crews, and other specialty tactics along in 1934 and '35," Mr. Erb said, "before we decided that such things weren't for us. The results of those methods showed up in our 1936 business, too, in the form of repossessions and other financial scrapes. So we went back to our usual methods of selling, and haven't changed since."

Present terms offered by the store are 10% down, with as high as 36 months to pay, if the customer's credit is A-1.

"Making terms too easy encourages customers to live beyond their means," Mr. Erb declared. "People can't be stampeded into buying something they're going to use for several years. That's one big reason why we went back to inside-the-store selling.

"If you do stampede people into buying something like an electric refrigerator—through too loose credit terms, meter buying, etc.—they're going to be sorry, and so will you—because you're going to be the person who gets the blame.

"That's what we concluded, after we'd tried those methods for 18 months. We decided it's largely wasted effort, of the type which doesn't do a store like ours any good."

USED 'BRAND' LINE

Last year, Mr. Erb said, Wanamaker carried a number of refrigerators with its own brand name, purchased through Gibson direct, although there are no "private brand" units on the floor at present. On all regular brand models, the store is supplied through Philadelphia distributors.

Electric range sales haven't been too encouraging, Mr. Erb stated, although the store did cooperate in the September drive staged by the Electrical Association and the Philadelphia Electric Co. last September.

"We sold several ranges," he added, "but our policy of not selling outside the store undoubtedly cost us several additional sales which we were not in position to follow up."

Mr. Erb. has been associated with the refrigeration industry from its triangular trouser days, and started Wanamaker's original appliance department close to 30 years ago. He went through the units, horizontally built, operated by a 3-ton compressor and selling for around $1,250.

TOO MUCH PSYCHOLOGY

Watching volume skyrocket and selling plans change, from that day to this, has convinced him that there's entirely too much psychology, and too little else, in modern appliance selling.

"This psychology starts from the manufacturer down," he declares. "The manufacturer's sales manager works on his key distributors, they go to work on their key dealers, and finally all this is unloaded on the salesman.

"It's all a part of the manufacturer's plan to get volume, by whatever means he can. How the dealer sells, or if he makes a legitimate profit, doesn't seem of much concern. He can sell any way he wants to, just as long as he sells—and sell he must."

Mr. Erb foresees a general crackup if conditions outside the industry suddenly change—if another depression comes along, for example. Conditions then, he says, will be the same as they will be in the radio field if television apparatus is offered at a moderate price—or like they were with the old Columbia Phonograph Co. when radio came along a decade ago.

Tapp Dept. Store Takes Kelvinator Franchise

COLUMBIA, S. C.—The James L. Tapp department store has added a complete line of Kelvinator appliances, which will be merchandised under the direction of A. S. Gaskin, formerly of Greenville.

E. L. Capps will be sales manager of the appliance department, and W. B. Gouger, Jr., will be service manager.

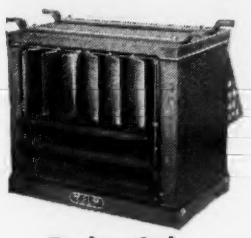
Members of the sales organization are J. L. Erwin, W. J. McColl, H. G. Brown, J. E. Jeffcoat, R. S. Mills, H. F. Garrick, F. A. Haddock, all of Columbus, and J. W. Patterson of Timmonsville.

French's to Retail Kelvinator In Montgomery, Ala.

MONTGOMERY, Ala. — French's, Inc., has been appointed a Kelvinator dealer in this city.

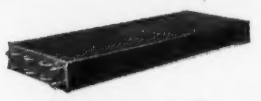
McQUAY

Suspended Type PRODUCT COOLERS



Product Coolers

McQuay Product Coolers are primarily designed to obtain high humidity condition in refrigeration storage rooms . . . for walk-in-coolers, storage rooms, and for all types of fixtures where forced air circulation is desirable.

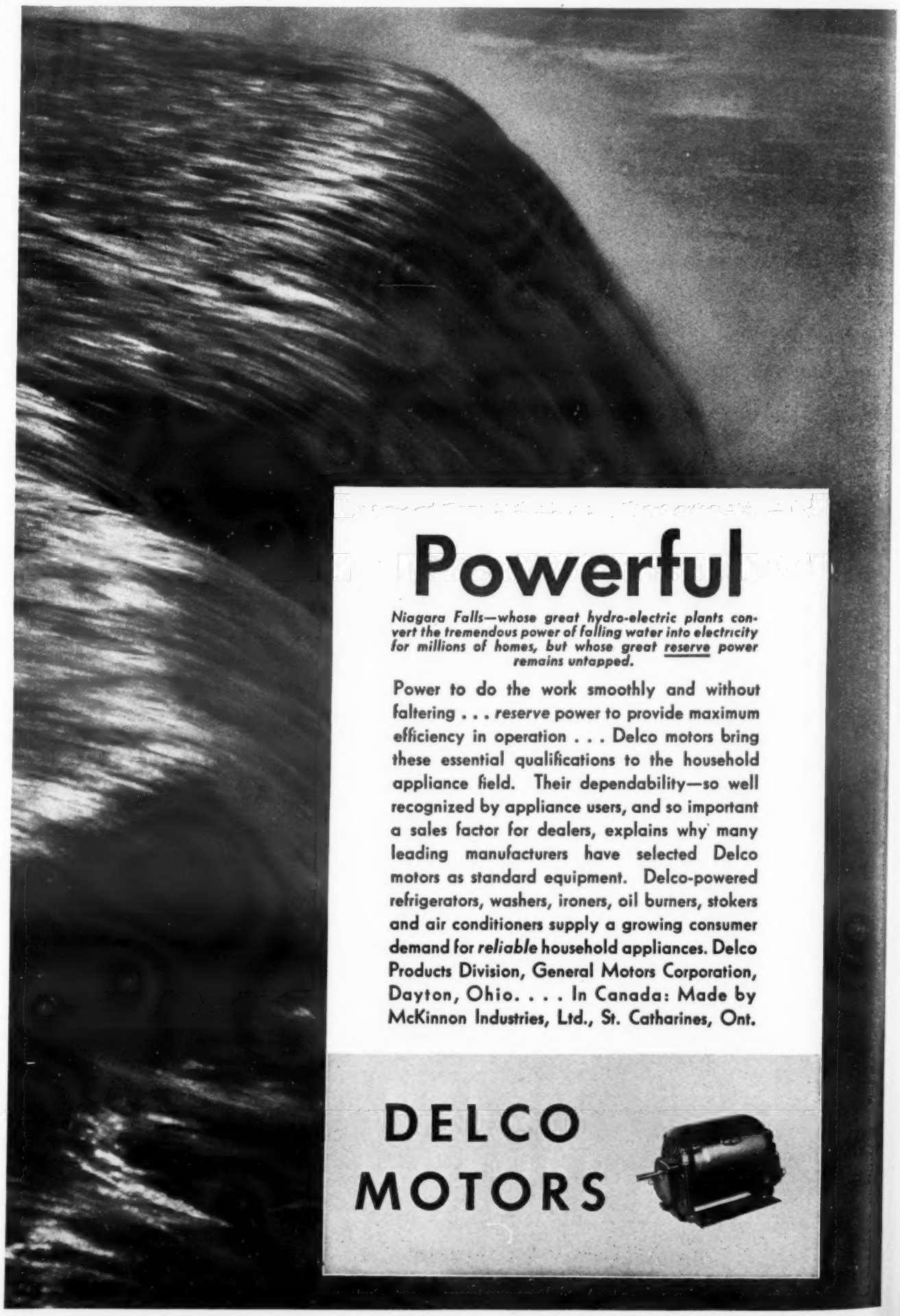


Evaporator Coils

Evaporator Coils of Standard sizes, as well as specially designed for any specific commercial refrigeration application . . .

WRITE for New Catalogs on McQUAY Unit Coolers, Comfort Coolers, Cabinet Concealed Radiation, Refrigeration Coils, Ice Cube Makers, Air Conditioning Coils, Blast Coils, Combination Heating and Cooling Units, Suspended and Floor Type Blower Coolers, Cabinet Floor Type Room Coolers, Etc.

McQUAY INC.
MINNEAPOLIS MINNESOTA.



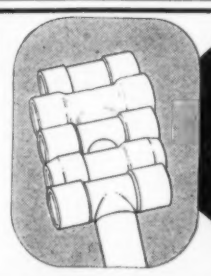
Powerful

Niagara Falls—whose great hydro-electric plants convert the tremendous power of falling water into electricity for millions of homes, but whose great reserve power remains untapped.

Power to do the work smoothly and without faltering . . . *reserve* power to provide maximum efficiency in operation . . . Delco motors bring these essential qualifications to the household appliance field. Their dependability—so well recognized by appliance users, and so important a sales factor for dealers, explains why many leading manufacturers have selected Delco motors as standard equipment. Delco-powered refrigerators, washers, ironers, oil burners, stokers and air conditioners supply a growing consumer demand for *reliable* household appliances. Delco Products Division, General Motors Corporation, Dayton, Ohio. . . . In Canada: Made by McKinnon Industries, Ltd., St. Catharines, Ont.

DELCO MOTORS

WOLVERINE COPPER TUBING

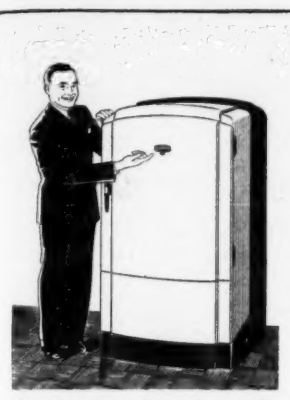


FITS ANY STANDARD FITTING

GET IT AT YOUR JOBBER

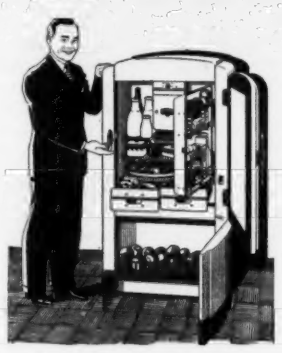
WOLVERINE TUBE COMPANY
1411 Central Avenue • Detroit, Michigan

LOOK BEHIND THE NAMEPLATE



Here's a product that sells on sight—because behind this nameplate is the greatest sales advantage in home refrigeration.

The *Conservador*—a shelf-lined inner door that provides an extra compartment for frequently used foods and prevents front-of-shelf crowding.



Behind the *Conservador* is a complete refrigerator with every worth-while feature found in other refrigerators — features your prospects want.

NOT ONE "SO WHAT!"

IN A HUNDRED DEMONSTRATIONS

"SO WHAT!" think nine out of ten refrigerator prospects when shown a refrigerator that is so much like a dozen others that they can't detect any worthwhile difference.

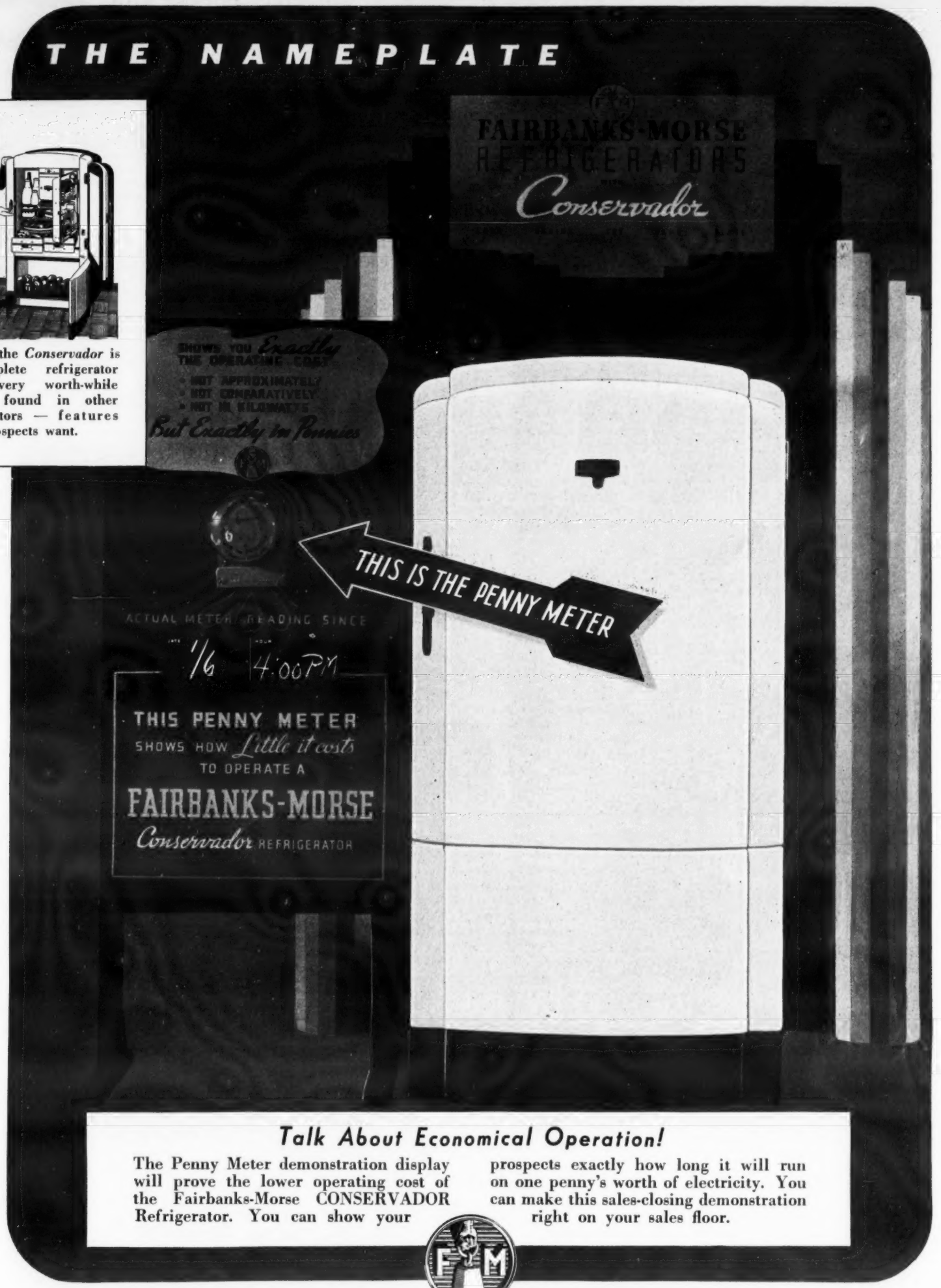
Show *your* prospects a refrigerator so outstandingly different that prospects can't say, "So what!" and competition *can't* say, "Me too." Show them the new 1937 Fairbanks-Morse CONSERVADOR —the *only* outstandingly different refrigerator on the market.

Different! First, a different outer door. Then a second door—the CONSERVADOR, greatest improvement in home refrigerators in 10 years. No other refrigerator in all the world has it—it's patented.

Different! The Self-Sealing Vegetable Crisper, Sliding Fruit Drawer, Utility Storage Compartment, Double-sealed Outer Door—

. . . AND EVERYTHING ELSE

In addition to big differences, sensational in a demonstration, this refrigerator has every other worth-while feature found in any and all refrigerators. It doesn't miss a thing: simplified cold control; automatic overload relay; ample *reserve freezing power* for any heat-wave emergency; automatic interior light; main food compartment thermometer visible without opening this compartment to warm outside air. Just name what you think it takes to close sales when prospects hesitate. This refrigerator has it—plus the backing of the 107-year-old reputation of Fairbanks-Morse. That means dependability to men and women everywhere—in every walk of life.



Talk About Economical Operation!

The Penny Meter demonstration display will prove the lower operating cost of the Fairbanks-Morse CONSERVADOR Refrigerator. You can show your prospects exactly how long it will run on one penny's worth of electricity. You can make this sales-closing demonstration right on your sales floor.

A Balanced Program

The Fairbanks-Morse Home Appliance franchise can include Refrigerators, Radios and Home Laundry Equipment. You may qualify for one or all in your territory—why not investigate today?

WRITE FOR COMPLETE STORY

Fairbanks-Morse CONSERVADOR Refrigerators offer one of the best franchises in the business today. Ask for *proof* of that statement for your profit's sake. Maybe your territory is open. Write your distributor or Fairbanks, Morse & Co., Home Appliance Division, 2060 Northwestern Avenue, Indianapolis, Ind.

Other Fairbanks-Morse Products:

WASHING MACHINES, IRONERS, RADIOS, AUTOMATIC COAL BURNERS

FAIRBANKS-MORSE
Conservador Refrigerator

Frigidaire System Installed In Ft. Wayne Dairy

FT. WAYNE, Ind.—Frigidaire Sales & Service Co. installed the refrigerating system in the new Tonne Dairy plant here, believed the most modern establishment of its kind in this section. Frigidaire equipment cools a large room used to maintain dairy products at a temperature of 35 to 38° F.

Bozman Co. Plans Addition To Baltimore Plant

BALTIMORE—R. H. Bozman & Bros., Inc., local manufacturer of complete refrigeration units, refrigerated display cases, tanks, and similar items, is planning to erect a one-story addition to its present plant.

Raymond H. Bozman is president of this firm; Earl D. Bozman is secretary-treasurer.

-COMMERCIAL REFRIGERATION-

Temprite Designs 2 New Combination Cooling Models

DETROIT — Beer-cooling units, models 50-B3W2 and 25-B4W2, provided with two external coils so that sweet water and seltzer water may be handled by one cooler without sacrificing beer cooling capacity, have been introduced by Temprite Products Corp.

Because of the limitations of cooler dimensions, it was impossible to produce these two-coil units in any but the two largest sizes. Units 50-B3W2 and 25-B4W2 are capable of cooling three or four different brands of beer respectively, in addition to sweet and seltzer water.

External coils of these units are made of copper, flattened in cross section and soldered to the shell of the cooler. Interior of these coils is tin coated. The cooling capacity claimed for each coil is approximately 8 g.p.h. reduced in temperature from 80° to 45° F.

The new units are available with either sulphur dioxide, methyl chloride, or Freon-12.

Temprite has also announced production of a new connecting tube to be used in connecting each coil of a Temprite beer cooler to the faucet. This tube is designed to take the place of the usual ⅜-inch block tin line.

The new tube is made of tinned copper, insulated with sponge rubber, and may be easily bent to fit both Temprite unit and faucet. The assembly is 12 inches long. This connecting tube comes complete, ready to tighten to the faucet. The assembly consists of a beer fitting which fits the exit port of all Temprite units, all ferrules, nuts, and washers necessary for the installation. List price of the complete assembly is $1.50.

Jennison Made Senior Engineer In Penn's Sales Division

DES MOINES, Iowa—Appointment of N. E. Jennison as a senior engineer in the sales division of Penn Electric Switch Co. has been announced by Nelson B. Delavan, vice president and director of sales.

Mr. Jennison will be in charge of dealer service meetings and service school work, as well as the training of sales engineers. According to Mr. Delavan, the appointment was made as part of Penn's expansion in sales and service instruction work.

Modern Equipment Co. Lists Specifications Of Commercial Line

(Concluded from Page 1, Column 1)

type, with long stroke for slow speed operation. Design and construction features include: bullseye crankcase oil gauge, heavy flywheels, drop-forged hardened-ground and lapped crankshafts, balanced bellows seal with external spring.

Pistons are nickel iron, cylinder walls are diamond bored and honed. Flex type suction and discharge valves are mounted in a single valve plate, which allows for the introduction of the refrigerant gas above the cylinder.

On the 4-cylinder units, a V-type compressor is used with a common manifold, which is said to balance the load on each cylinder block. Cylinders, cylinder heads, and valve plates are finned to reduce head temperatures.

Air-cooled compressors are equipped with oversize condensers which are completely covered. A shut-off valve is provided between the liquid receiver and condenser. The liquid receiver is also equipped with a fusible plug.

Water-cooled compressors are equipped with finned tube-and-shell condensers, the condensers having a total surface area of 25 square feet per horsepower. In addition, all water-cooled models are equipped with a super heat remover between the compressor and the condenser. Water-cooled units are equipped with with an air-cooling fan. The water valves are rigidly mounted and become an integral part of the complete highside assembly.

Both air and water-cooled models, when equipped with an electric starter, in addition to the control, are completely assembled and wired, ready for installation. All models are equipped with a pressed steel base, and are provided with a motor adjustment built into the base with two convenient motor adjusting nuts on the end of the base.

Air-cooled models are made in sizes from ¼ to 2 hp. Water-cooled models are made in sizes from ⅓ to 10 hp.

Compressors are driven by V-cog belts, with multiple belts being employed on all sizes from ¾ hp. and larger. Three optional speeds are available in all sizes—a low-temperature speed, a standard-temperature speed, and a high-temperature speed.

California Packers Use Portable Pre-Coolers In Produce Plants

CHICAGO—What are said to be the first two trailer-mounted portable pre-cooling plants ever built, equipped with 70-ton Diesel-driven compressor of General American Car Co., the units, were recently placed in operation to provide additional pre-cooling capacity for California citrus and lettuce packing plants during peak shipping periods.

The trailers were built by B & J Trailer Co. here. Owned and operated by the Pre-cooling Corp., a subsidiary of General American Car Co., the units comprise a 70-ton Vilter compressor, with brine tank and circulating pump, powered by a Cummins Diesel engine, and mounted on a 24-ton B & J semi-trailer, with tandem axles.

Dispatched to points where car loadings temporarily tax local pre-cooling facilities, these units speed up loading operations by lowering car temperatures more quickly, reducing icing time and costs enroute, and eliminate large investments in stationary equipment needed only for short periods.

Parked adjacent to the loading dock, the brine tank is connected by means of flexible hose connections to fin-coil pre-cooling units, which serve individual cars. Each coil unit is equipped with a motor-driven fan.

Use of these large portable refrigerating plants permits pre-cooling of as many as five cars at a time. Safe loading temperatures, it is said, are obtained in less than two hours.

Combination System to Be Used for Swift's Ice Cream Trucks

CHICAGO—After a year's operation of a trial unit, Swift & Co. has adopted for ice cream delivery service a refrigerated truck body cooled by a combination power-take-off and hold-over system. A considerable number of these new bodies are now being built for Swift by General Electric Co. at its Erie, Pa., plant.

The refrigerating system includes a compact condensing unit located in a compartment in the skirt of the body. On the road, this unit is driven by the truck engine through a power-take-off and magnetic-clutch drive. At the plant, it is operated by an auxiliary motor mounted within the skirt compartment, and arranged for connection to the plant electric system.

In addition to using direct expansion coils for cooling, as is the usual practice with power-take-off systems, hold-over cooling tanks are employed. In this way, the condensing unit not only keeps the pay load cool during road operation, but also keeps the hold-over tanks charged to tide over intermittent periods of heavy refrigeration demand, caused by short runs with frequent stops.

Some of these bodies, to be used by Swift in small town and rural service where the percentage of actual running time is high, will be equipped with thin, partial-capacity hold-over tanks. Other bodies will be used in city service, where the percentage of actual running time is low, and will be equipped with thick, full-capacity hold-over tanks to provide a large amount of reserve cooling.

250 Western Kelvinator Distributors Hear Sales Plans at Regional Conventions

DETROIT—More than 250 western distributors and their selling organizations heard Kelvinator's 1937 commercial-product and sales-promotional story at regional conventions held in Portland, Ore., San Francisco, Los Angeles, and Dallas during the first two weeks in February, according to J. A. Harlan, commercial division manager, who headed the crew of five company executives staging the series of conferences.

This group of meetings was the first of a series which Kelvinator is holding in key cities this spring to present its 1937 air-conditioning and commercial refrigeration program to distributors.

Despite a 21-inch snowfall in Portland and a serious "flu" epidemic in Dallas, attendance at all four conferences was above expectations according to Mr. Harlan.

Speaking in Los Angeles, Mr. Harlan stated, "In my many trips to the coast I have never seen prospects for business as splendid as now. The settlement of the maritime strike is releasing a large amount of business dammed up for the past few months. Definitely, sentiment is highly optimistic on general business conditions."

Commercial executives who assisted Mr. Harlan with the west coast distributor meetings included A. H. Reinach, sales manager of the commercial and liquid cooling department; L. G. Estep, assistant sales manager in charge of residential air conditioning; H. M. McGaughey, assistant sales manager of commercial air conditioning; and A. U. Salomon, beverage-cooler sales department.

Eastern and mid-western cities that will participate in the Kelvinator commercial distributors regional conference plan this spring, which supplants the single convention formerly held annually in Detroit, are Boston, New York, Baltimore, Cincinnati, Atlanta, St. Louis, and Chicago.

Commercial Conditioning Benefits Tomato Grower

ATLANTA—Absolute control of temperature and humidity is essential to the proper ripening and storage of tomatoes, ideal ripening conditions calling for a temperature of 70° F. and a relative humidity of 85%. Realizing these facts, James Cerniglia, head of Tom-A-Toe Produce Co., has modernized his plant by installing air-conditioning equipment.

The plant's seven ripening and storage rooms are constructed of four-inch corkboard finished with a ¾-inch coating of plaster. Each room is equipped with a cooling system consisting of a refrigerated coil and a fan for proper air distribution. The York cooling system is connected to a 15-hp. refrigerating unit.

Each of these rooms is also equipped with a forced convection electric heater automatically controlled by a thermostat.

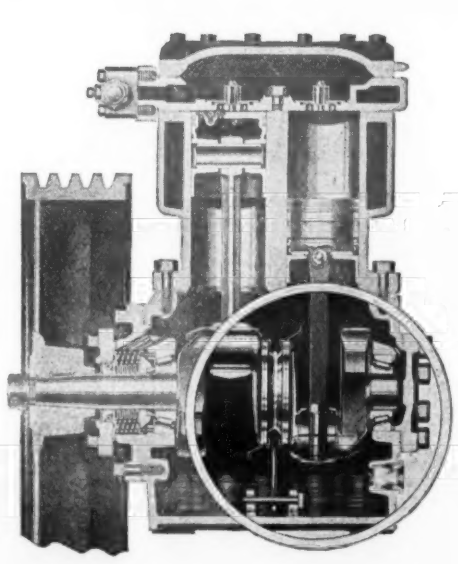
Two of the rooms, used primarily for ripening, have automatic humidifiers. These consist of a humidistat, water solenoid valve, and a spray nozzle to maintain the predetermined moisture content in the room.

As a result of the installation of this equipment, Mr. Carniglia reports improved ripening conditions, reduction of spoilage loss, and increased employe efficiency.

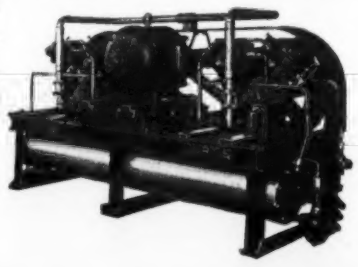
ONLY CURTIS HAS

"CENTRO-RING" LUBRICATION

● The Curtis "Centro-Ring" Positive Pressure Oiling System is found only in the Curtis compressor. One simple moving part (a ring) picks up the oil and delivers it to the crank shaft. Centrifugal force distributes the oil under pressure through ducts to all points requiring lubrication. No intricate gear or plunger pump to get out of order — positive and controlled lubrication is assured at all times.



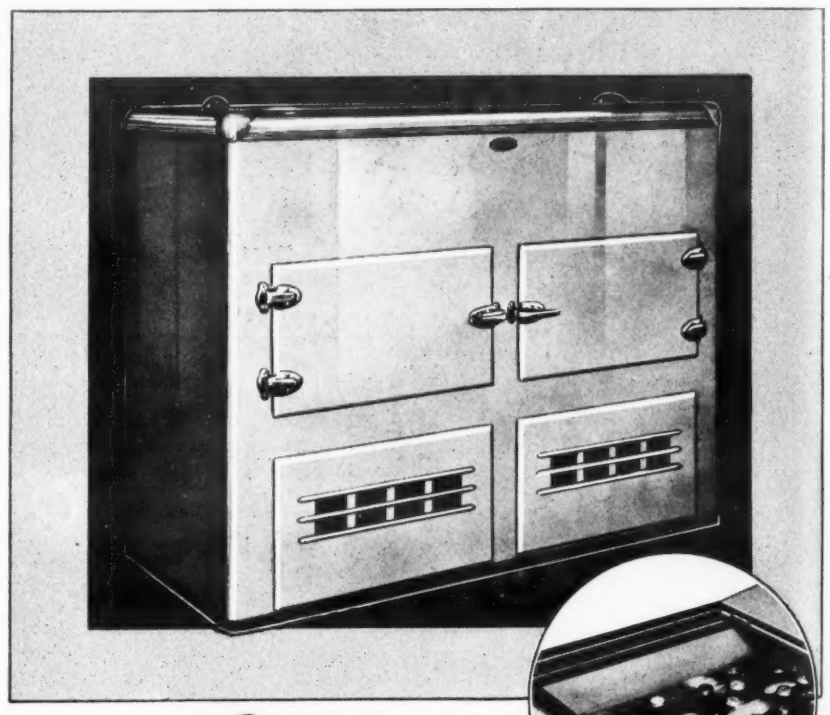
Investigate this exclusive Curtis feature — another example of the advanced engineering that contributes so much to the efficiency and carefree performance of the Curtis Condensing Unit.



Represented in Canada by Canadian Curtis Refrigeration Co., Ltd. 20 George St., Hamilton, Ontario

CURTIS

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Co.
1912 KIENLEN AVE. ST. LOUIS, U. S. A.



A BIG New MARKET

(right) Pelco makes its own Floating Ice!

an AMAZING, TWO-PURPOSE UNIT — PERFORMANCE that's YEARS AHEAD—the RIGHT PRICE—and consumer acceptance!

Here's EVERYTHING You Need to Make Money!

Upper compartment makes floating ice for the most rapid and uniform cooling action known. Lower compartment is a pre-cooler for beverages or a refrigerator for foods.

Taverns, road-houses, restaurants, refreshment stands, billiard parlors, bowling alleys, resorts, hotels—any place selling bottled beverages and foods—all are prospects for PELCO. What a market! In five minutes you can find 20 or 30 prospects within a few blocks! And they've never seen a cooler like PELCO!

PELCO Electric
Beverage-Food COOLER

MAKES FLOATING ICE

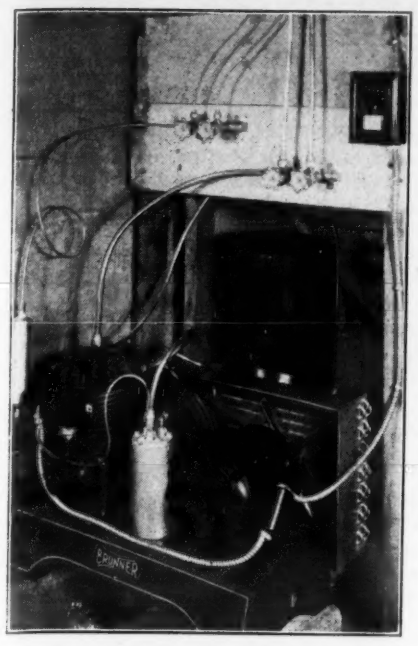
That's the reason for PELCO'S amazing capacity and economy. Cools bottled beverages from room temperature to desired degree in 30 minutes! Built on advanced, proven engineering principles, beautifully finished.

Distributors—a few choice territories still open. Dealers—write for name of nearest distributor. Address Desk A-37.

★

Refrigerator Division
PORTABLE ELEVATOR MFG. CO.
BLOOMINGTON Est. 1899 ILLINOIS
Export Dept.: 104 E. 45TH ST., N. Y. CITY Cable Address: CARMUSE—N. Y.

Using Waste Space



This Brunner refrigerating unit installed in Stein's restaurant, Johnson City, N. Y., furnishes refrigeration for Temprite beverage-cooling equipment. Note how advantage was taken of waste space under the stairway for the installation, with a panel board for control and hand valves placed on the stairway's supporting uprights.

* * *

Upstate New York Cafe Uses Brunner Unit

JOHNSON CITY, N. Y.—A Brunner model A-75 air-cooled ¾-hp. condensing unit has been installed in connection with two Temprite beverage-cooling units in Stein's Restaurant here by Stanley Mowry of Northside Electric Co., Binghamton, N. Y.

Northside Electric Co., Brunner distributor in the Binghamton territory, has made 50 combined Brunner and Temprite installations during the past two years.

Large Southern Fishery Installs Fish-Freezing Equipment by York

FLORENCE, S. C.—One of the most recent installations of refrigeration equipment for fish-freezing purposes was made last summer by the Charlotte branch of York Ice Machinery Co. for Florence Fish & Oyster Co. of this city.

This company had been operating a small freezing plant for several years, using a 4 by 4-inch York ammonia compressor, and last year decided to expand its facilities with a somewhat larger plant alongside the old one.

Freezing coils in the new room are designed to hold 392 fish pans 29 by 14 by 3 inches deep. The pans are stacked two wide by 14 long on each coil, and each pan is supposed to hold from 25 to 30 lbs. of fish. The whole freezing coils can be loaded with from 10,000 to 12,000 lbs. of fish at one freezing.

The coil is 18 feet long, 5 feet wide, and 9½ feet high, fabricated from 12 coils of 1¼-inch full weight pipe, each coil being 18 feet long by 14 pipes high, bent on 8-inch centers, making a total of 3,052 ft. of pipe. The coil has welded suction and liquid headers, and is divided into two sections for defrosting purposes. The whole assembly is supported from the floor by an angle iron framework of sufficient strength to carry the weight of coils, frost, and fish.

When the fish have been frozen, they are stacked in the storage portion of the room, much as one would stack cord wood. Due to the fact that the fish are smaller at the head and tail ends, air circulates through the pile so they may be kept indefinitely when stored in this manner. In addition to the freezing coils, there are 2,025 feet of 1¼-inch full weight pipe suspended from the ceiling by I-beams that support the roof.

The refrigerating system for this new room was guaranteed to freeze 10,000 lbs. of fish in a 24-hour period, but Willis Gregory, owner and manager of the plant, says that he is freezing about 25,000 lbs. of fish daily, and could freeze more if his men were able to change the fish oftener.

Both the old and the new plants are completely automatic, and are equipped with float control.

FOR 30 YEARS
STANLEY KNIGHT
SODA FOUNTAINS
Lead again with new
1937 STREAMLINER Model
DISTRIBUTORS WANTED
3430 N. Crawford Ave., Chicago, Ill.

Undabar Introduces Two New Beverage Cooler Models

ST. LOUIS—Undabar Cooler Corp. has on the market for 1937 two models of its Undabar bottled beverage cooler, one of which is fitted with two pre-cooler drawers, the other with this compartment open for ordinary case storage.

The units are self-contained, and are equipped with General Electric condensing units. Distribution is through General Electric distributors and dealers exclusively.

Cabinets are constructed on heavy gauge galvanized steel, to insure against rust and corrosion; coach type joints are used where panels and framework meet. Top of the cabinet is formed to provide chrome track for roller bearing sliding lids. All cabinet surfaces are finished in white Dulux with black trim. Three coats are used.

Top half of the cooler forms a tank, in which bottles are cooled by immersion in a water bath. The tank is insulated on sides and bottom with 2 inches of corkboard, hydrolene-sealed. Lid is also cork-insulated, as are the pre-cooler drawers in that model cooler.

A large size drain at the bottom of the tank facilitiates changing of water, allowing the passage of labels and other accumulations to be drained off into a bucket or container.

Condensing unit, located in the lower part of the cabinets, is a standard G-E ⅓-hp. unit, cushion mounted for quiet operation. Compressor is of the two-cylinder belt-driven reciprocating type. The air-cooled condenser is constructed of copper tubing and fins, coated to insure high thermal efficiency. Motors for either alternating or direct current operation are available.

Operation of the condensing unit is thermostatically controlled by the bath water temperature. Bulb of the control is clamped to the cooling unit in the lower rear opening of the cabinet. Temperature control is adjustable, to maintain any desired bath temperature.

Cooling coil, recessed in the side and end walls of the tank, and protected by metal lattice, is a continuous coil. Installation in side and end walls allows a clear bottom, providing more bottle storage room and maintaining an even surface.

Model SC 600/37, without pre-cooler drawers, has a dry compartment 12x20x12½ inches, and a wet compartment 68x21x16 inches. Storage capacity of the unit is 216 standard 12-ounce bottles, upright, with dry compartment removed; 176 bottles when dry compartment is not used for bottle storage; 270 bottles lying flat, removing dry compartment; and 220 bottles lying flat when dry compartment is used.

The cooler will also handle 56 half-gallon bottles upright, or 80 flat, or 380 bottles of 6-ounce size.

Model PC/37, with a wet compartment of the same size as its mate, has no dry compartment, but two pre-cooler drawers of 22x19½x12½-inch size. Wet compartment will handle 216 standard 12-ounce bottles standing up, or 270 bottles lying flat. Pre-cooler drawers will handle 210 standard 12-ounce bottles, or 40 half-gallons. Eighty half-gallon bottles also may be stored in the wet compartment. Capacity of the cooler, when 6-ounce bottles are used, is 600 bottles.

Gardner Heads Portland Super-Cold Branch

LOS ANGELES—Appointment of M. N. Gardner as manager of the Portland, Ore. branch office of Super-Cold Corp. was announced by officials at the Super-Cold Corp. factory here recently.

Mr. Gardner had been with the Super-Cold factory only six months when he was promoted to this new position.

Georgia Power Co. Salesmen Secure Large Order

ATHENS, Ga.—Efforts of Alex Scudder and G. W. Joiner, Athens district salesmen of Georgia Power Co., and T. C. White, rural engineer, resulted in sales of four electric refrigerators, five ranges, one water heater, one pump, one beverage cooler, and numerous other small electric appliances to some of the 28 customers of the utility's about-to-be-energized Winterville - to - Sheffer's - Dairy power line.

These men also took orders for conversion of five gasoline water pumps into electrically operated pumps.

Hardisty Appointed Credit Manager for Insulite

MINNEAPOLIS—George H. Hardisty has been appointed credit manager of The Insulite Co., manufacturer of insulation materials.

Temprite Publishes Booklet Of Engineering Charts

DETROIT—Temprite Products Corp. has published a booklet of sales engineering charts designed to assist salesmen and dealers in convincing prospective customers of the superiority of its equipment.

The first group of charts makes a point-by-point comparison of the sweet water bath and Temprite methods of cooling. The remaining charts deal only with Temprite products, showing different types of cooling systems, floats, valves, and oil traps.

Accompanying the sales engineering charts is a companion booklet which contains detailed explanations of all the charts, and tells the Temprite story in words.

York to Install Equipment In Baltimore Dairy

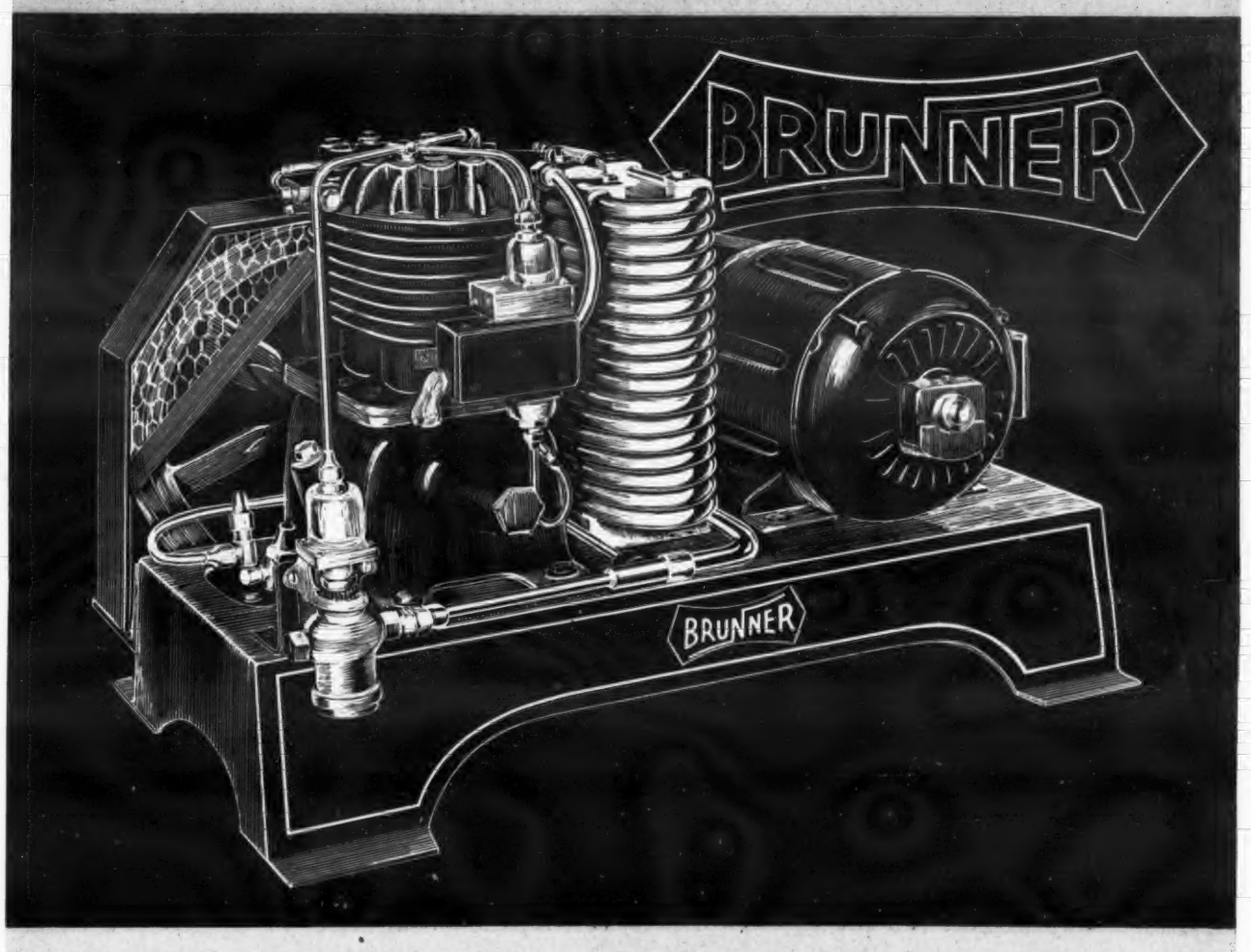
BALTIMORE—The York Ice Machinery Corp. has been awarded the contract for installing refrigerating equipment in the Maryland Seal Dairy Products Corp. plant, local unit of the Silver Seal Dairy Co. of Philadelphia. The equipment will involve an expenditure of around $50,000.

Mueller Brass Issues New Booklet on Valve Line

PORT HURON, Mich. — Mueller Brass Co., manufacturer of refrigeration valves and fittings, has issued a new booklet containing a general discussion of mechanical refrigeration, and explains the part played by Mueller accessories.

The pamphlet is illustrated not only with drawings and diagrams of the valves themselves, but also with simplified diagrams of refrigeration systems, showing the location and explaining the function of each particular valve of fitting.

THE BRONZE BEARING FOR THE PISTON WRIST PIN IS ACCURATELY DIAMOND BORED TO INSURE PERFECT ALIGNMENT AND MINIMUM WEAR



Just a detail? Of course it is. Yet upon the precision and durability of the piston pin and bearing depend to a large degree the life of the refrigerating compressor. Here is an element taking a considerable number of rotations per minute—and riding on cast iron won't do. This explains why the Brunner engineering specifies a hard bronze alloy at this vital point, and extreme accuracy of boring and alignment. • • • • Just listen to a Brunner snap "on" and quietly purr—whether it's new or many thousand tons of refrigeration old. Extremely quiet! Naturally this means less wear and tear, greater serviceability. • • • • You'll be interested in a detailed study of the Brunner construction and range of models, comprising 47 Condensing Units, air and water cooled for practically all refrigerating and air conditioning applications. Full information for quick reference in the Brunner Refrigeration Catalog. . . . Your copy will be mailed promptly on request. Brunner Manufacturing Co., Utica, N.Y., U. S. A.

BRUNNER
BUILDS FOR *Greater* DEPENDABILITY

AROUND THE WORLD
WITH GEORGE F. TAUBENECK

Economically speaking, Sweden is the envy of the earth's civilized nations today. Calm and almost unassailable in the midst of a world gone giddy, Sweden has consistently kept her nose clean. She has not wasted her substance in riotous living, in disastrous warfare, or in chasing economic will-o-the-wisps.

Editor Taubeneck, who visited Sweden as one of the last stops on his trip around the world, presents here a study of the means by which Sweden made her rapid recovery from the world-wide depression, and how she currently keeps solvent.

Laissez Faire

With the possible exception of Great Britain, no nation has recovered so fast from the world-wide depression as Sweden. And in the words of J. Sigfrid Edstrom of Stockholm, who is vice president of the International Chamber of Commerce:

"The chief factor in Sweden's recovery from the depression has been that her government has not meddled with the country's trade, nor with any prices or conditions of labor.

"There are at present in Sweden only 43,000 unemployed, which is a lower figure than was shown in 1929, and these low figures may be entirely attributed to their general broad policy of letting business alone, and of allowing it to work out its own salvation."

Smart Sweden kept out of the World War. But, as was the case in Holland and Switzerland, that war cost her plenty. Trade lines were cut off; markets were closed. So Sweden had a rehearsal in 1916 and 1917 of the great economic crisis which was to occur in the early 1930's.

During this earlier depression, the crown appointed several Royal Commissions to help lift the country out of its hole. These political bodies—as is usually the way with bureaucracies—hindered more than they helped.

And, exactly paralleling the situation in the United States when the Supreme Court declared the NRA unconstitutional, Sweden's recovery from that depression started its real forward march when the commissions were abolished.

Retaining memory of their burned fingers in the previous depression, Sweden's rulers decided to let business work out the answers to its own dilemmas in the post-1929 depression.

Instead of turning business control over to the politicians—who did not and probably could never understand it—even more economic control was granted to business men who had a grasp of affairs, as well as a personal stake in the outcome.

The free trade policy was maintained almost throughout the period. Trade treaty handicaps were avoided. Monetary restrictions were eschewed, as were the import quota systems which became so popular throughout Europe.

In other words, Sweden saw in advance the fallacies of economic nationalism and government control of business—the two most important, and most disastrous, ultimately—international developments of the last decade.

* * *

Nation Aloof

On the map, Sweden is stationed above other European countries. She is also above them morally, economically, and intellectually.

While the rest of Europe is arming to the eyebrows, cutting one another's ears off with trade restrictions, fostering the most reprehensible forms of mass hysteria, and in general rushing toward the most suicidal conflict in world history (it's going to be historic hysteria, or hysterical history), Sweden calmly remains aloof and above.

In the main, this goes for Norway, Finland, and Denmark, too. Not even in America would it appear that capitalism and democracy are so safe as they seem to be in Sweden and Finland.

Just as she has kept the politicians out of industry, Sweden has firmly resisted any attacks on her constitution or her democratic form of government. The rest of the world might go haywire, but Sweden intended to stick to her knitting—even at the cost of temporary difficulties in getting her yarn.

The result has been most happy.

The policy must be good.

* * *

Fruits of Education

One long-range policy which has helped Sweden maintain national integrity through the recent world-shaking crises is that of mass education on a high plane.

For centuries the education of her people has been a prime Swedish aim. The fortunate result is a democracy which has learned how to cooperate, individuals who believe in individualism and whose pride is wrapped up in self-reliance, a national calmness in times of trouble and emergency, and a populace which knows how to take care of itself.

Was business bad in one line? Start something else. Did radical agitators come into the land with new panaceas for economic ills? Argue with them patiently from the standpoint of one's superior knowledge, and then show them the door if they became obstreperous. Did another nation offer insults, verbally or economically? Do not retaliate; armies and navies are costly, and drain the nation of wealth needed for production.

Actually, the so-called "common people" reason as in the above paragraph. Is it any wonder that Sweden leads the world today from the standpoints of national prosperity and maintenance of democratic principles?

* * *

Aladdin in Harness

Switzerland developed her admirable electrical system because the steep grades of the mountainous country required electrical power to facilitate transportation.

Sweden developed an equally admirable electrical system because the winter nights were so long.

With only four or five hours of daylight available out of the 24, Swedish winters were pretty sad until the advent of electricity. Power lines were spiderwebbed throughout the country. Motors and appliances followed the Mazda lamp, and up went the national standard of living.

Electric power aids in the cultivation of more than 60% of the arable land. Use of electricity in industry is high, as it is in homes.

I have no comparative figures to prove this statement, but Swedish engineers told me that in all three classifications—homes, farms, and factories—the percentage of units using electricity for power is the highest in the world.

The comforts and conveniences which resulted have helped make Sweden a happy country.

Above all, the Swedish people utilize electricity to read. They were among the first to institute adult education. Supervised reading courses, correspondence schools, circulating libraries are all extremely popular. Everybody reads: education continues throughout each lifetime.

That, perhaps, is the chief source of their national strength.

* * *

Sensible Credit

So rational does Sweden's economic and financial mechanism seem, it may be well to study it in some detail.

But before wading into such a discussion (don't be discouraged at the outset—Sweden's thinking and planning are simplicity itself, and the discussion should not be tedious to follow) it might be well to point out the second Rock of Sweden's democracy.

The first is education.

The second is sensible credit.

Instalment selling, while present, is not especially popular. Checking accounts in banks are almost nonexistent. Bills are paid with cash. Less than 1% of the population plays the stock market. Those who do invest in securities must pay cash on the line; and delivery of the stocks must be made within 24 hours.

Surplus money is put in the bank, on time deposit.

Thus the great superstructure of paper credit, or bookkeeping money—the expansion or contraction of which plays such havoc with America's internal economy—has no place in the Swedish picture.

* * *

Strength in Age

The strong face of this Swedish woman is typical of aging members of the race, for they maintain vitality long after youth.

Money & Banking

Sweden's monetary unit, the krona, has a par value of $0.4537, and is composed of 100 ore. Except for a few old "Ryksmyntsedlar" and "Bancosedlar" coins, and a number of Swedish coins minted prior to the dissolution of the union of Norway and Sweden in 1905, no old issues of coins in other denominations are in general circulation in Sweden.

Under a law passed in March, 1930, the importation of gold is permitted. Norwegian and Danish coins of gold, silver, and bronze, although in circulation in Sweden, have no legal status, and are not recognized as legal tender.

There are no foreign paper notes in circulation, and checks are not popular, although they are becoming more generally used. Swedish paper currency consists of notes valued at one krona, and five, 10, 50, 100, and 1,000 kronor.

There are three copper coins, the 1, 2, and 5-ore pieces. The silver coins are valued at 10, 25, and 50 ore, one krona, two kronor, and five kronor. Another 5-kronor piece, and pieces of 10 and 20 kronor comprise the Swedish gold coins.

The Bank of Sweden (Sveriges Riksbank), in whose activities the government has an active interest, has the sole right to issue bank notes. These notes are redeemable in gold on demand. The bank has permission to issue notes having a face value double the amount of its gold reserve, plus 350,000,000 kronor.

Silver is unrestricted as regards its export and import but there are checks on the exportation of gold.

The Bank of Sweden was founded in 1656, and is the oldest bank in Europe. It also has the distinction of being the first bank in the world to issue paper currency.

Ownership is vested in the state, and the bank is managed by a seven-man Board of Governors, six of whom are appointed by the legislative divisions of the government; the chairman is appointed by the king.

A monopoly on the foreign exchange market is exercised by the bank, and it regulates the monetary standards of the country.

Sweden also has a few powerful commercial banks, which lost their note-issuing privilege as late as 1904. A gradual process of amalgamation has concentrated more than half of the banking business of Sweden in three main banks—the Svenska Handelsbanken, Skandinaviska Kreditaktiebolaget, and the Goteborg Bank—all of which maintain branches.

About 1,000 banking offices and branches are scattered throughout the country, or approximately one bank for each 6,000 of population. Compared with the rest of Europe, this is an unusually far-reaching banking service.

Sweden was the first European country to return to the gold standard after the war, making the shift in 1924. The value of the krona had fallen one-third shortly after hostilities ended. When the country returned to the gold standard, it resumed financial operations on the pre-war value of the krona.

During the last half of 1930, the world-wide economic depression was felt in Sweden first through a shrinkage in foreign demand for Swedish goods. By spring of 1931 a heavy excess of imports over exports precipitated a financial crisis.

Sweden felt the decline in wholesale prices acutely, and fought against inflation by endeavoring to raise wholesale values to meet inflationary reactions abroad.

Throughout the depression Swedish financiers made no effort to depreciate the foreign exchange value of the country's currency to gain a possible advantage in trade marts. The banking committee of the Diet strongly opposed devaluation of the krona, and kept it at as high a level as possible.

In the spring of 1933 the government appointed a monetary council, composed of trained economists and representatives of the principal industrial interests, including Electrolux. This committee recommended that Sweden continue to pursue an independent financial policy, and manage its currency at home.

Outside observers have expressed the belief that Sweden was forced to abandon the gold standard again because of heavy adverse trade balances, large foreign payments arising from the disastrous Kreuger commitments, withdrawal of foreign investments, and the flight of capital to other countries.

It is said that Sweden wants to return to gold at the earliest possible moment. Because 70% of her trade is foreign, it is difficult for Sweden

(*Continued on Page 10, Column 1*)

Swedish People Carve Wood Incomparably, Eat Ice Cream Sparingly, Read Books Voraciously

(1) Ancient Swedish windmill, reconstructed at Skansen park. (2) Example of the ornate dignity of Swedish woodworking—at which the race is without peer. (3) Cable-car conductor at Skansen. (4) Ice cream is vended from portable stands such as this. (5) In the shadow of sculptered memorial, this Swedish gentleman is indulging in the national pastime—reading. The Scandinavian nations boast populations which have attained the highest percentage of literacy—and greatest per capita circulation of books in the world.

Consumer Seen at Mercy Of Producer Under Tydings-Miller Bill

BOSTON—The Tydings-Miller bill, if enacted, would place the consumers of the nation at the mercy of manufacturers insofar as the retail prices of the trade-market goods are concerned, Channing E. Sweitzer, managing director of the National Retail Dry Goods Association, told a class of students of the Massachusetts University Extension Course on trends in retail distribution here.

He urged amendment of the bill, as proposed by the N.R.D.G.A., to limit the sale of trade-marked goods to not less than the actual net delivered cost of such commodities to the buyer thereof "when such contracts or agreements are lawful as applied in interstate transactions.

"Adoption of this amendment," he said, "would remove from the province of this bill the economic evils of price fixing to consumers, would abolish predatory and destructive price cutting, would enable retailers to operate their businesses without unwarranted dictation and interference by manufacturers, and would protect the consumer from exorbitant and unfair prices in the purchase of all goods coming within the scope of this proposed law and the various state statutes which it is intended to legalize on goods sold in interstate commerce."

The speaker termed the new Patman bill, which would forbid manufacturers from engaging in retailing, and conversely retailers from engaging in manufacturing, as "unwarranted infringement upon the rights of individuals which would deprive consumers generally of the privilege of purchasing goods from long recognized and established channels."

A number of proposed constitutional amendments pending in Congress for regulation of conditions of employment and trade practices will depend in outcome entirely upon what happens to the proposal for reorganization of the Supreme Court, he said. "I am convinced that we have not yet seen any measure governing the employment of labor which will be seriously considered, and we will not do so until bills are introduced in Congress seeking re-enactment of the NRA in modified form later in the session."

Greusel Again to Head Appliance Group

MILWAUKEE—For the third year, Frank W. Greusel, president of Greusel Distributing Co., was re-elected president of the Wisconsin Radio, Refrigeration, and Appliance Association at the organization's annual meeting March 12 in the Milwaukee Athletic Club.

Also reelected were A. F. Seidel, retail vice president, and Gordon Fairfield, wholesale vice president. Arthur Schleiger was elected treasurer, and B. S. Wisniewski, secretary. H. L. Ashworth continues as executive secretary of the association.

On the board of directors, in addition to the officers named above, are Michael Ert, honorary chairman; W. F. Seemuth, chairman; Henry Czech, Howard Richardson, A. Van Antwerpen, Leroy Kunzelmann, Gordon Ische, and G. J. Weiland. Directors Czech, Richardson, and Van Antwerpen were elected at the annual meeting; Mr. Kunzelmann was appointed to fill out the unexpired term of A. D. Lee.

Georgia Power Sales of All Appliances Up in January

ATLANTA—Sales of all major appliances in the Georgia Power Co. territory showed increases during January, electric ranges leading the list with 161 sales, compared with 50 during the same month last year.

Household refrigerator sales were up one over last January, with 119 units reported, and ironer sales during the month totaled nine, against eight for January, 1936. Washer sales totaled 44, compared with 18 for the month last year, and water heater sales were 128, against a January, 1936, total of 107 units.

F-M Develops Series of Sales Promotion Slide Films

INDIANAPOLIS—"Out In Front" is the title of the first of a new series of slide films being developed by the home appliance division of Fairbanks, Morse & Co.

This film shows a typical wholesale representative successfully going through a day's work. It starts with a dealer presentation, and concludes with the dealer closing a sale. According to company officials, it serves the manifold purpose of instructing the wholesale men, educating dealers, training retail salesmen, and selling prospects.

12,887,774 Wired Homes *without* refrigerators!*

- **many more homes than have yet been sold**
- **to the salesman of a Dry-Zero Insulated refrigerator, these millions of homes are good prospects**

The man who can tell the economy story of a Dry-Zero insulated refrigerator has something to which these people will listen. ***Economy of operation and long life.***

It is cheaper to run a refrigerator with Dry-Zero Insulation in the walls than with any other material.

A Dry-Zero insulated refrigerator will save from 20c to $2.00 per month in running costs, because Dry-Zero Insulation is "non-hygroscopic." Hygroscopic insulants absorb moisture and lose their heat stopping efficiency after a few years of service in the average kitchen.

The unit of a Dry-Zero insulated refrigerator will not be called upon to carry the extra burden imposed by cheap insulation and will last longer and work more efficiently and, hence, more economically.

If you want the complete story of how Dry-Zero Insulation saves in cost of operation, write for copies of a colorful folder which you can give to your prospects.

*Figures from Electrical Merchandising and Air Conditioning and Refrigeration News

DRY·ZERO REG. U.S. PAT. OFF.
INSULATION
The Most Efficient Commercial Insulant Known

DRY-ZERO CORPORATION

222 North Bank Drive
CHICAGO

687 Broadview Avenue
TORONTO

AROUND THE WORLD WITH GEORGE F. TAUBENECK

(*Continued from Page 8, Column 5*)

to manage her currency independently of other nations.

While the Riksbank has kept the krona fairly stable, there have been acute fluctuations in agricultural produce prices, and costs of several imports have risen sharply. These price disparities have left the Swedish farmer in something of a plight, against which government financial agencies are still battling.

The administration of Sweden's state finances are concentrated in two mutually independent divisions of the government: the Public Treasury (Finansdepartmentet) controlling the Paymaster General's office (Statskontoret), and the National Debt office (Riksgaldskontoret) managed by seven directors who are elected by and responsible to the Riksdag, or Diet.

Administration of public revenue, expenditure of loans and handling of the state loan policy, and management of the national debt are in the hands of the latter agency.

Budget estimates are prepared by the government during the autumn months, and are submitted at the opening session of the Riksdag in January. The Swedish budget is voted upon as the Finance Act (Riksstaten) for the year by the Riksdag at the end of its session.

On the income side of the annual budget are listed such current revenues as state revenues proper (taxes, etc.), receipts from state productive funds, the government's share in the Riksbank's annual profits, and revenue collected by the National Debt office. Revenue from capital sources (accumulated balances), and proceeds from loans also are included.

Real and current expenditures head the expenditure side of the Riksstaten, together with expenditures for capital purposes, amortization, investment in state business enterprises, increase in loan funds, and other expenditures calculated to yield a good return. All receipts from capital investments constitute an increase to the regular appropriations, which rest at the disposal of the government.

* * *

They Balance the Budget

Sweden has adopted the admirable system of accounting revenue and expenditure on the basis of cash receipts and cash payments. Paymasters must make payment as soon as accounts of a given liability have been determined. Consequently there are scarcely any outstanding liabilities in arrears! Government financial accounts are published monthly.

The budget is always made to balance. If revenues from productive funds and taxes do not balance expenditures, the difference is made up from various capital sources, chiefly the available balance of surpluses from previous years. Loans are never resorted to for budget balancing.

Most excesses are charged against the treasury reserve fund (Kassafonden), which is a working reserve fund set up for the purpose of adjusting budget variations.

* * *

State Financing

The fundamental principle of Swedish state budget financing is that proceeds from loans should not be used for expenditure other than something which will effect an increase of the state capital assets. Assets of the state exceed the national debt.

State business funds are conducted as independent concerns possessing their own working capital, but each has to deliver its annual surplus to the treasury department. Surpluses from state productive funds, and shares in the Riksbank's profits, are normally more than sufficient to cover interest on the national debt.

Finance administration of the government has an account at the Riksbank to which all revenue is credited and all expenditures debited, the bank being directly responsible to the Riksdag. When the National Debt office publishes its accounts, no credit balances are deducted.

Development of the different varieties of Swedish revenues has been similar to that of most countries. Old fixed taxes have gradually disappeared, and the whole system has been recast in the direction of more extensive taxation of income and property, graduated on a progressive scale.

* * *

No Closed Doors

The progress of privately owned commercial banks in Sweden during the past two decades has been characterized by a continuous process of amalgamation and concentration. In 1900 there were 70 commercial banks in the country; now there are only 29.

All passed the deflation crisis after the war, the world financial crisis, and the Kreuger fiasco of 1932 without losses to creditors. There were no closed doors.

Combined turnover of the 29 commercial banks in the country is between five and six billion kronor annually.

Bonds for industrial purposes are nearly always issued by the agency of the banks. Share issues are less frequently offered.

It is estimated that half of the total credit granted by the banks is made directly to industrial and commercial undertakings, against bills and mortgages. A considerable part of the total loans is made against shares and collaterals.

Swedish banks have current accounts, those on 14 days' notice, savings accounts, and others on one-to-six and four months' notice.

More than 60% of Sweden's bank accounts are in the last two groups. The public is somewhat reluctant about buying industrial shares or even bonds, preferring savings accounts to both.

Besides the commercial banks, the Post Office Savings Bank with 500,000,000 kronor on deposit, and 500 small savings banks with about three billion kronor on deposit, serve the country.

There are numerous special mortgage banks for long fixed credits. The General Mortgage Bank supplies agricultural credits, and the Town Mortgage Bank of the Kingdom of Sweden, supported by 22 local associations, furnishes credits to urban estates. The two have issued bonds valued at 1,300,000,000 kronor.

For secondary mortgages on real property in towns there is available the Housing Credit Bank. The Swedish Shipping Mortgage Bank furnishes shipping mortgages. Both are empowered to issue bonds partly guaranteed by the state. In cooperation with several commercial banks, the government has established the Industrial Credit Co. for providing industrial enterprises with long fixed credits.

State Control

By special legislation, Swedish commercial and savings banking has been under state control for several years. A set of regulations has been made for the safety of the banks and their depositors, one feature of which is a limitation of the amount of public deposits in proportion to the certified funds of the banks.

Swedish currency laws have, from the beginning, adhered to the principle that banks should occupy themselves strictly with banking. Their right to hold or deal in shares is strictly limited.

State control of banks has long been in the hands of a special administration, the Bank Inspection Board, which also controls the operations of the Swedish Stock Exchange. Since 1929, the board has been in charge of public banking.

Contrary to popular opinion, the collapse of Ivar Kreuger's financial empire in 1932 did not have a serious effect on the financial or economic position of Sweden's banking system. Kreuger's outside operations were more extensive than those in which he figured within Sweden itself.

Although Sweden's economic position was extraordinarily strong by 1929, no internal discrepancies characteristic of a boom were in evidence when the depression first hit other nations.

Depression struck, naturally, through Sweden's export trade in raw, semi-manufactured, and machinery products. Decline started gradually in the winter of 1929-30, and unemployment first was noticeable during the summer of the latter year.

Important home market industries prospered as late as the spring of 1931. Export losses were counterbalanced for a time by the favorable development of the money market.

Interest rates could be maintained at a low level, despite the gap between exports and imports, because Sweden had a favorable balance of payments on capital account.

It was evident that the Swedish financial crisis of September, 1931, which reflected withdrawal of credits to Sweden, meant the home market industries could no longer withstand general business contraction.

* * *

Depression Policies

In September, 1931, Sweden left the gold standard, and this mitigated the shock to a considerable extent, because the depreciated currency lessened the strain on the money market. Home market producers were afforded efficient protection against competition from countries still on the gold standard.

Conditions leading to the Swedish crisis were much the same as those of England: the flight of short-term "vagabond" capital to the country in large deposits, creating an internal liquidity of money, but enhancing an unstable external position.

In the spring of 1932, Sweden's monetary policy directed a moderate reflation of wholesale prices, within limits prompted by an urgent desire to maintain current living standards.

Under pressure of decreasing exports, the Swedish depression gained impetus until the summer of 1932. Then favorable effects of depreciation on the home market commenced to be felt, and after the Kreuger panic passed, a satisfactory foreign exchange reserve had been collected.

In the winter of 1932-33 business conditions showed marked improvement, but employment decreased. A revival was noticeable in production for the home market, but employment in the export industries lagged.

Sunlight and Shadow

A remarkable number of verdant, sturdy old trees dominate the streets of Stockholm, so that even on the sunniest days the pedestrians are protected from heat and glare by assuaging shade.

Although the summer of 1932 marked the bottom level of the trade depression, in less than 10 months several changes started a revival which reflected in increased production.

From the second quarter of 1933 onward, the expansion was almost continuous. The level of 1929 production was reached in the first quarter of 1934, and since then new records of production have been established regularly.

* * *

Factors in Recovery

Three factors contribute to this extraordinary recovery: (1) an efficient money market, and the exchange policy of the Riksbank; (2) an expansionist policy by the Swedish government, through organizing public works programs, and by subsidizing agriculture; (3) a spontaneous increase in Sweden's export trade.

The policy of the Riksbank has been of fundamental importance. In July, 1933, the bank started pegging sterling (tying Swedish currency to the English pound) at the rate of 19.40 kronor per pound. To stabilize the rate of exchange despite increasing exports, it took over large amounts of foreign exchange from other banks. Commercial banks were given a high liquidity by this move, and a further reduction in interest rates was made possible.

In evaluating the influence of exports on employment and production, it should be noted that, during the first part of the trade revival, exports could generally be based on existing stocks of goods. Thus new production was delayed considerably, and it was not until 1934, when old stocks were well reduced, that reemployment increased.

During the winter of 1934-35, the government's public works policy proved important in the general economic revival.

Since then Sweden has progressed steadily on the road to recovery, and now stands among the forefront of nations which have weathered the storm without serious damage to their economic systems.

* * *

Foreign Trade

Rapid growth of Sweden's foreign trade during the last half century can be credited to the government's liberal commercial policy, an excellent merchant marine, the need for certain staple and manufactured products which the country does not produce, and a rising demand for foreign-grown raw materials for Swedish factories.

Ever since the middle of the 19th century, when the government abandoned its restrictive trade policies in favor of lower tariffs and an active sponsorship of home industries, Swedish foreign trade has mounted, until it now rivals that of the largest European nations.

Adverse balance of imports during the past two decades has been more than covered with freights earned by the Swedish mercantile marine, and by other "invisible" incomes.

* * *

Home Industries

During the last few decades Swedish foreign trade has been characterized by the rise and progress of large-scale home industries. Few European nations have organized world-penetrating industrial institutions and foreign business contacts so rapidly and completely as have the Swedes.

Unusually intelligent and adaptable, Swedish industry makes the most of scant home supplies of raw materials in several lines, and has built up a large foreign market for its wood goods, pulp, paper machinery, and ores. Ships, vehicles, machinery, oils, and metals are exported in a small degree.

Sweden's principal needs are foodstuffs, the so-called luxury commodities, textile raw materials and fabrics, wheat, coffee, tobacco, fruit, and minerals.

Because her cotton and wool production are practically nil, Sweden is forced to import fabricated textiles, such as wearing apparel and fabrics. Of late years 20 to 30% of her imports have been raw cotton and wool for her home textile industries, which are expanding steadily.

Sweden lacks adequate coal fields to supply either her factories or her kitchen stoves and furnaces. Consequently coal is prominent on her import list, as well as the industrial grades of coke and other carbon fuels.

Hides and skins for the leather industry, and copper, are other prominent imports.

Abundant forest reserves provide the greatest source of exportable wealth. Close to 40% of Sweden's exports are forest products. For its timber the country has developed an excellent foreign market, especially among the southern European nations which lack wood supplies.

For a long time Sweden's foreign trade has been principally concerned with nearby European markets, but lately America has entered the commercial picture with increasing prominence.

Great Britain and Germany hold premier places in Sweden's foreign

(*Concluded on Page 11, Column 1*)

Skansen Park in Stockholm Preserves the Rural Sweden of Yesteryear

Spread over a large tract of rolling hills at the outskirts of Stockholm, Skansen park combines all the facilities of a recreational and amusement park (including a zoo), with a large area devoted to the preservation of Swedish architectural types. In conception and execution the Skansen motif is quite like that of Henry Ford's Greenfield Village and its reconstruction of landmarks from the pages of the story of America. Above are four examples of Swedish farm homes from as many different periods of her long and cogent history.

Around the World

(*Concluded from Page 10, Column 5*)

trade. For more than a century, business relations and banking between Great Britian and Sweden have been closely interrelated, and Sweden has followed the British lead in going on and off the gold standard, notably because of financial tie-ups which would make it practically impossible to act otherwise.

Great Britain is the chief export market for Sweden's goods, whereas the greater proportion of Swedish purchases are made from Germany.

The United States now occupies third rung on the Swedish trade ladder, and at the present rate of progress should displace Germany as a source of supplies within a few years.

America furnishes Sweden with mineral oils, wheat, raw materials for her textile industries, copper, automobiles, and trucks. In return, large quantities of Swedish paper and pulp products are exported to this country.

Sweden's imports from the United States have always exceeded exports with the exception of 1933, when for the first time America's balance of trade with Sweden was unfavorable.

Because of Sweden's geographical position, the country is almost entirely dependent on shipping for its commercial intercourse with other countries. Her communications by land are confined to Norway and Finland, both of which do a relatively small volume of trade with Sweden.

The Swedes have always been a seafaring nation (remember the Vikings!) and to this must be attributed much of the country's progress in foreign trade, as in the case of Holland.

About one half of the tonnage navigated between Sweden and foreign countries is carried in Swedish vessels. Vigorous growth of the merchant marine reached a climax last year when its gross tonnage was 1,649,000 tons—a high figure for a geographically small nation.

* * *

Match Industry

Sweden's match industry, a vital factor in her export trade, is known the world over. Commercially, Swedish matches have been exported for almost a century, and are the principal source of the world's supply. Chief competition comes from Japan.

Safety matches were invented by Professor G. E. Pasch, a Swede, who patented his process in 1844. They were commercially perfected and first exploited by J. E. and C. F. Lundstrom in their factory at Jonkoping during 1844-45.

Although the safety match has always been an easy product to market, the adaption of matches to meet varying requirements and climatic conditions in countries from the Arctic to the tropics has been at once the most difficult problem and the most potent factor in the growth of the Swedish match industry.

Success of the first Jonkoping factory led to the formation of many new firms. Six companies were united to form the Jonkoping & Vulcan Match Co. in 1903, and several outside branches were merged as the United Swedish Match Factories in 1913. Finally, in 1917, these two mergers were united as the Swedish Match Co., subsequently reorganized after Ivar Kreuger's suicide in 1932.

This gigantic Swedish concern maintains more than 100 factories in 30 countries throughout the world, and numbers 140 subsidiaries in the organization. Annual production is 90 billion matches in Sweden, and 450 billions in the subsidiary factories.

Over 3,400 trade marks are registered in 106 countries, and 100,000 acres of Swedish forest supply wood for the concern.

Foreign branches also act as sales agents for other Swedish products.

Tracy-Wells Co. Appoints Two New Executives

COLUMBUS, Ohio—Appointment of two new executive assistants was announced last week by officials of Tracy-Wells Co., distributing organization operating the Appliance Distributing Co. here and the Arnold Wholesale Corp. in Cleveland.

J. E. Howell was named assistant to R. C. Hager, vice president and general manager of Tracy-Wells, and John P. McCastner was appointed to assist C. O. Tracy, treasurer of the company, and buyer and merchandise manager for house furnishing, hardware, and electrical lines.

Range Technique Explained In New Booklet

NEW YORK CITY—A booklet titled "Meals Go Modern—Electrically," describing and explaining the technique of electric range operation and the variety of ways in which it adds to kitchen convenience and comfort, has been issued by National Kitchen Modernizing Bureau here.

The book, written with the cooperation of the home-making staffs of *McCall's, Good Housekeeping, Woman's Home Companion, Delineator* and *Pictorial Review*, includes 80 pages, with 16 pages of four-color illustrations.

It contains information on the general principles of electric cookery, regardless of the make of electric range which the housewife may use.

Chapter headings include "Count Your Savings," "Oven Dinners," "Meals for the Oven," "Broiling Electrically," "Top of Range Cooking," "Small Appliances," "Home Canning," and "Cleaning and Care of the Electric Range."

Brandt Made Salesmanager at Washington Kelvinator Branch

BALTIMORE—Executive personnel of Kelvinator's Washington, D. C., branch division was announced by D. A. Dimitry, manager of Baltimore-Washington Kelvinator operations.

Arthur E. Brandt, former refrigeration and appliance sales manager of Southern Wholesalers, Inc., is general sales manager, and Charles Acker, air-conditioning engineer.

Department heads are: M. Read, commercial sales; Robert L. Mansfield, automatic heating sales; J. L. Jeffries, wholesale sales; J. Armiger, domestic refrigeration sales; Murray Wolfe, beverage and water cooling sales; R. D. Sheldon, floor; Henry Gerwe, service.

Standard Statistics Sees Good Prospects in Store For Appliance Dealers

NEW YORK CITY—Despite numerous price advances in many lines, sales of household products have continued to show greater-than-expected gains, according to the current survey of household products and supplies published by Standard Statistics Co.

Even the increases, however, have not fully offset the rise in costs of raw materials, wages, and other expense items in certain lines, the publication states.

In these instances, adequate profit margins have been possible only because companies have been operating on previously-acquired low-cost inventories, and additional advances may become necessary later in the year.

This prospect has been, in part, responsible for the sales improvement, as dealers have built up inventories in anticipation of higher quotations, the survey says. Another factor, it adds, has been the generally unsettled labor situation in the country, and the consequent desire of both manufacturers and dealers to maintain adequate stocks as a protection against any interruption of production.

To some extent, therefore, recent operations have been above normal levels, the survey continues, and some slacking in demand may be experienced in coming months.

However, only part of the improvement can be ascribed to such abnormal factors; the stimulus of primary significance has been the general improvement in economic conditions, attested by the 12% increase in sales of home furnishings last year indicated in the preliminary report of National Retail Dry Goods Association.

This advance brought the total to within 18% of the 1929 level, the rise being aided by an exceptionally good December business, the survey states.

Factory shipments of electric refrigerators during December were almost double those of the same month during 1935, the survey recalls; furniture shipments were up 79%; washing machine sales, 8%; vacuum cleaners, 37%.

With retail demand running at high levels, the report says there is little danger of dealer stocks reaching unhealthy proportions, and any slackening in factory sales as a result of the cessation of inventory expansion is likely to prove only temporary. Rehabilitation of homes affected by the recent floods, the report concludes, should cause a supplementary demand of important proportions for many lines of household products.

All factors point to a definitely satisfactory level of operations for manufacturers of household products for the current half year, the survey holds, with volume in most lines continuing to show gains. The strong retail demand should permit price advances as needed to offset increased costs, and earnings for the six months should be well above those for the corresponding 1936 period.

Changes in retail prices for appliances are believed to be tending steadily upward.

'Quota Busters' Club Elects 9 Officers

MANSFIELD—Nine officers of the Westinghouse Quota Busters Club were presented with watches by Vice President A. E. Allen at a testimonial dinner during the recent three-day sales convention here.

Each year the nine salesmen holding the highest ranking in their territory are elected to offices in this club, the Westinghouse official national honorary organization.

This year the men winning the awards were: Henry Carfagna, Carfagna Appliance Co., Turtle Creek, Pa., rancher; James L. Rich, Houston Light & Power Co., Houston, Tex., and R. C. Pollock, R. C. Pollock Co., Van Wert, Ohio, directors; Les McCurrey, H. E. Saviers & Son Co., Reno, Nev.; R. C. Droutz, Bushyager and Droutz, Jeannette, Pa.; and D. M. Rogers, Good Housekeeping Shop, Vancouver, Wash., are superintendents; John H. Campbell, United Illuminating Co., New Haven, Conn.; Glenn H. Leresche, Hill & Leresche, Pittsburgh; and K. Dan Thompson, Gulf Public Service Co., Overton, Tex., foremen.

Hamburg Places Order for 100 Carloads of Electrolux

PITTSBURGH — E. A. Hamburg, president of Hamburg Brothers, Electrolux distributing firm with headquarters here, recently placed an order with Servel, Inc. for 100 carloads of Electrolux refrigerators. Gordon Bloom, Servel sales representative, secured the order, which is said to be the largest single order for Electrolux refrigerators to be placed by a distributor.

Porcelain enamel is always new

PORCELAIN ENAMEL Fused on Metal

While as a product porcelain enamel dates back to the days of Confucius, the thousand-year-old vases in the art museums are as colorful, clear, clean, hard, *new* as the day they were made.

That's the sort of staying qualities porcelain enamel gives your refrigerator. The housewife may buy one of your refrigerators today. If it is all porcelain enamel, the finish stays new—for it is *the* lifetime finish.

PORCELAIN ENAMEL INSTITUTE, INC.
612 North Michigan Avenue, Chicago

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FOR years, chemists and technical men have waged unceasing warfare on the attacks of rust.

Many industries have found the Parker Processes to be the most effective barrier to stand between their products and corrosion. For hundreds of different products, from the automobile, exposed to all kinds of weather, the refrigerator and washing machine, constantly exposed to humidity, to the better protected office machine, Parker Processes afford effective resistance to rust.

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PARKER RUST-PROOF COMPANY
2197 EA MILWAUKEE AVENUE • DETROIT, MICHIGAN

Ask for These Books:

For more than 22 years, this company has devoted its entire time, talent and energy to the improvement of rust-proofing methods. New books describing the Parker Processes are available to manufacturers and technical men. Send for your copies.

PARKER *Processes* CONQUER RUST
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AIR CONDITIONING AND REFRIGERATION NEWS

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Anniversary Gifts

UTILITIES and manufacturers will cooperate this year in the attempt to supplant wooden articles with electrical appliances as the accepted gift to couples celebrating their fifth wedding anniversaries. This idea is sponsored by the Edison Electric Institute in conjunction with the National Electrical Manufacturers Association.

National advertising will carry the story to the country at large. Dealers will be counted upon to check marriage license records, and dig up names of prospects who have survived the first five years. Next step will be to see that relatives and friends of these connubially successful pairs are informed about the idea.

Window displays of electrical appliances in department and furniture stores will call attention to the projected change in gift notions. Groups of small appliances similar to the Christmas bargain packages so successfully sold in New York last December, will be featured as the "proper" gifts for the fifth wedding anniversary.

The point can be made that small appliances which may have been received as wedding presents will have served their usefulness by the end of five years. New toasters, irons, and the like will be most welcome.

This is an idea which should appeal not only to dealers, but to the American public as well. Wooden gifts might be appropriate in Sweden or Samoa, perhaps—where woodworking is a leading industry and wood craftsmen are artists—but not in the United States. No item is so symbolical of American progress as an electrical appliance.

And, for the five-year couple, no gift is likely to be so useful or so appreciated.

Filmed Salesmanship

READERS of the meaty articles on selling methods which have been appearing in AIR CONDITIONING AND REFRIGERATION NEWS during recent weeks may have noticed a decided trend toward the use of movies and slidefilms in electrical appliance merchandising this season.

Films have long been employed in specialty selling, of course; and in times past, such notable contributions to the art as General Electric's "Just Around the Corner" have made merchandising history. But this season the practice does not seem to be confined to the largest manufacturers and their key dealers; it is apparently becoming widespread, penetrating down to the smallest towns, newest dealers, and greenest salesmen.

John Patterson who, as founder of the National Cash Register Co., is responsible for most present-day specialty selling methods, once said:

"A motion picture will do a salesman's hardest work, and double his sales. A motion picture machine never makes a mistake. The pictures can be understood by everybody, no matter what langauge he speaks.

"The pictures teach through the eye, which is the best way to teach. The nerves of the eye are 22 times stronger than the nerves of the ear; when you talk to a prospect, most of what you say goes in one ear, and out the other.

"If you would have him believe and retain what you say, teach him through the eye."

Patterson's whole argument for selling through the eye is concisely summed up in an account he once made of the growth of the visual selling idea.

"I hold that one cannot rely on speech alone to make himself understood or to gain and hold attention. A dramatic supplement is needed.

"It is better to supplement whenever possible with pictures which show the right and wrong way; diagrams are more convincing than mere words, and pictures are more convincing than diagrams."

So the National Cash Register Co., along with General Electric, Westinghouse, and Frigidaire, has become a confirmed user of motion pictures to tell its story.

These industrial movies, most of which are made by concerns in Detroit (which turns out more feet of film every year than any city in the world outside of Hollywood), are used as educational "shorts" in neighborhood theaters, or are shown to special audiences drummed up by a dealer or agent who hires a hall.

Most specialty organizations have their own small auditoriums for sales meetings; and they find it relatively easy to persuade a group of prospects to come in to see a free movie.

Naturally, these movies must tell a story. It is not enough that they show a process, or take the beholder on a trip through a factory. They must dramatize the message the specialty manufacturer wants to put across.

A regular scenario must be worked out, skilled actors employed, and interest sustained throughout. Most of them run about a thousand feet; although, if they are designed for use in private auditoriums, where an audience can be held at least half an hour, they can run twice or even three times as long.

Concerns like General Electric and Westinghouse, in their attempts to promote the sale of electric refrigerators and the electric kitchen in a highly competitive market, have even gone out to Hollywood to get their movies made.

Out there, in big studios like Warner Bros., which has made a specialty of this sort of thing, they use the scenarists, directors, and actors on the studio payroll, as well as the production facilities.

Moreover, they can route the completed film through the regular distributing organization of the Hollywood concern, thus getting it into theaters all over the land.

Distributors and dealers are informed of release dates, and tie up their advertising with the showing of the picture, advising people to go to the theater at that time. Thus the exhibitor gets free advertising, and is more inclined to include the film in his program.

Further joint showmanship is often engaged in by exhibitor and dealer, such as street parades, and the like. Frequently the dealer places a display of his product in the theater lobby. Sometimes the refrigerator on display is awarded at the end of the showing of the picture to the holder of a lucky ticket stub.

These methods, of course, are not necessarily tied up with industrial pictures made in Hollywood. Whenever a sales organization can get its "educational short" shown in a leading local theater, all such publicity methods can be employed with profit.

Today's specialty selling organizations do not stop with regulation movies. Some of them equip their salesmen with their own portable projectors, screens, and films.

It is frequently much easier to get one's toe in the door when one can offer to show the busy housewife a picture. And after setting up the screen and projector, a film can be shown which makes a complete product demonstration.

For the most part, these sales demonstration pictures are not movies. They are a series of stills, composed of pictures and captions. These are now known as "slidefilms."

A picture is thrown on the screen, and then its explanation. The salesman really has to do little talking; his story is all told for him, although he can keep the presentation going by interjecting his own remarks when the pictures are shown.

If a prospect shows particular interest in a certain feature which is demonstrated on the screen, the picture can be left on display while the salesman goes into details.

These slidefilms serve a dual purpose for the specialty manufacturer. They help the prospect visualize the product, and its service to her. Second, they insure that the *complete* story will be told. In this respect they are a jump ahead of the sales manual.

Finally, they prevent exaggerations on the part of salesmen, which sometimes fly back and hit dealer and manufacturer in the face.

After all, "seeing is believing," and in today's hot competitive selling, which places so much emphasis on *proof,* an appeal to reason *through the eye* is probably one of the most effective methods available to implant a sales story in the mind of a prospect.

— LETTERS —

Results of Survey by The American Exporter

American Exporter
Johnston Export Publishing Co.
World's Largest Export Journal
386 Fourth Ave., New York, U. S. A.

Editor:

From time to time we test the reader habits of American Exporter readers abroad in various trades.

In such a test recently made among an important group of our readers who are importers of or dealers in American refrigerators and/or parts, we found that 29% of these readers were also reading AIR CONDITIONING AND REFRIGERATION NEWS.

This compared as follows with similar publications:

AIR CONDITIONING AND REFRIGERATION NEWS	29%
Paper B	8%
Paper C	7%
Paper D	3.6%
Paper E	3.6%
Paper F	2%

You will note that AIR CONDITIONING AND REFRIGERATION NEWS was mentioned three times as often as the next most popular domestic paper in your field.

FRANKLIN JOHNSTON,
Publisher.

The Master Catalog Replaces Mailing Lists

Frigidaire Division
General Motors Sales Corporation
1100 Main St., Buffalo, N. Y.
Mar. 10, 1937

Gentlemen:

This office is very desirous of obtaining a list of the independent service and installation men in the territory covered by this office, which comprises the following area:

New York—Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming counties.

Pennsylvania—McKean county north of an East and West line running approximately two miles south of Port Allegany.

Do you have any such list, or is there any way at all that you can suggest we can proceed to procure such a list?

H. S. DE LAGRANGE.

Answer: We are not prepared to sell mailing lists other than those published in directory form.

Last year we attempted to meet the demand for mailing service, but we found that too much burdensome detail would be involved in meeting the wide variety of requirements. The mailing list business is a *business* in itself, and elaborate preparations must be made to supply promptly geographical or vocational classifications desired by the customer when he happens to want the service.

After much study of the problem we found a way to meet the needs of most of our advertisers. The answer is the "Master Catalog" or Red Book, now being produced.

We have informed our advertisers that the first edition of the Red Book will be mailed to 5,000 names having specified qualifications. Those who wish to distribute literature to that list may do so on an economical basis.

As other lists are selected and classified, we will announce mailings to those particular groups. Thus, we are scheduling a series of "trains" to definite destinations. Those who want to "ride" may do so at a fixed price.

A Korkkolu Club Column?

Korkkolu Club
National Refrigeration Supply Jobbers' Association
2707 David Stott Bldg.
Detroit
Jan. 18, 1937

Mr. Cockrell:

As one of the charter members of this now famous society, which was organized in Detroit in May, 1936, you unquestionably will be interested in seeing that the identity and general character of this organization are perpetuated for all time.

As you will recall, almost all the directors of the Jobbers' Association, the directors of the Parts Manufacturers' Association, and many members of Kelvinator and Frigidaire, etc., have joined. With such a large membership in this club already established, it appears to me that some medium should be developed whereby all new members who participate "successfully" in the initiation cermony should formally be announced to the current club membership.

My suggestion as to the method of accomplishing this is for your paper to publish weekly an honor roll, in which the names of all new members, along with the firms they represent, appear. It is clearly understood that membership in this club shall be limited to those people directly connected with the refrigeration industry in some manner.

R. H. SPANGLER,
President.

Service Manual in French Will Answer Real Need

Institut International du Froid
9, Avenue Carnot, Paris (XVIIe)
February 16th., 1937.

Editor:

I thank you for your letter of Feb. 2, and for the copies of the "Catalog of the Refrigeration Library" giving foreign rates.

In reply to your request whether it is possible for us to transmit copies of this literature to various companies and individuals likely to be interested in your publications, I have to state that in principle we can do no more than review in our Bulletin the free copies of the works we receive for the Institute's library. If, as a result of this, we receive a request for information, we may very well send out a copy of your catalogue. Our international status and the resulting obligation of impartiality in commercial affairs, do not allow us to do more. You will no doubt appreciate this.

We learn with interest that you are having your Commercial Refrigeration Service Manual, by Mr. K. M. Newcum, translated into French. I believe that it will answer a real need, no book of the kind existing so far in French, as we have already often had to inform inquirers from this country interested in this subject. It is difficult for me to offer you any comments as to the practical methods which might be adopted for selling the book in French-reading countries. Privately, I would suggest the idea that the best plan would be to contract with a leading French publishing company specialized in the distribution and sale of engineering and commercial books, for instance:—

Dunod, Editors,
92 rue Bonaparte, Paris 6e.

Librairie de l'enseignement technique,
Leon Eyrolles, Editor,
3 rue Thenard, Paris.

As to the papers which were presented at the Hague 1936 International Refrigeration Congress, they will be included in the Report of the Proceedings to be issued shortly by the Secretary of The Netherlands Organizing Committee, Mr. J. F. H. Koopman, 107 Juliana Stolberglaan, The Hague, Holland.

It is as well to point out that the papers will be printed in the original text, in the same way as was done in previous congresses. It is not feasible to have all the reports (making some 2,000 printed pages) translated into other languages in view of editing separate French and English editions. The cost price would be prohibitive.

DR. MAURICE PIETTRE, Director.

Excellent Story on Electrolux Operations

Western Union Telegram
Cleveland, Ohio
March 22, 1937.

Editor:

Please send to Elliott & Evans, Inc., 2528 Superior Ave., Cleveland, marked to the writer's personal attention, 400 copies of the issue of AIR CONDITIONING AND REFRIGERATION NEWS containing your excellent write-up of the Electrolux refrigerator operation. Bill above company for same. Thanks.

R. C. ELLIOTT, President,
Elliott & Evans, Inc.

Grainger Withdraws Unauthorized Discount

W. W. Grainger, Inc.
Wholesale Distributors of Motors, Electrical, Hardware, and Refrigeration Supplies
815 Congress St., Chicago
March 5, 1937.

Gentlemen:

I am sincerely sorry that we transgressed in the matter of the cash discount on the matter of REFRIGERATION NEWS subscription. It was purely unintentional and based on the fact that Harry Alter Co. shows the subscription at $3.00 and allows a 2% cash discount from everything in his book. We will be glad to set up a $4.00 net price in our catalog if you want us to offer subscriptions.

We wish to apologize for any trouble we have caused you. We are not a cut-price house as is evidenced by such standard lines as Cutler Hammer, General Electric, Square D, Ranco, Tecumseh, Penn, Minneapolis-Honeywell, etc.

We would appreciate a reply from you that would be in a friendlier tone than yours of the 25th, since your subscription has been offered in our catalog for months without any previous word from you.

E. O. SLAVIK.

Another One for the Book

Schultz & Fuller Hardware
626 Gratiot Ave.
Saginaw, W. S., Michigan.
March 22, 1937.

Subscription Dept.:

Please tell Mr. Taubeneck to put his "Around the World" in book form. It is very interesting, but I have missed a few issues through the year.

E. D. FULLER.

THE AIR AGE

Conditioning Without Regard to Air Temperature

By F. O. Jordan

Most interesting was the statement made by Dr. C. A. Mills of the University of Cincinnati in his Philadelphia address before the technical session of the National Oil Burner and Air Conditioning Show, regarding constant identical comfort in his test room at temperatures ranging from 30° to 95°. (See report of Dr. Mills speech on page 14 of this issue.)

Dr. Mills' hypothesis and test was based upon the fact that radiant heat passes readily from bodies of relatively higher to lower temperatures through the atmosphere with but little effect upon, or interference from, the atmosphere. Thus radiant heat affects only bodies having sufficient density to stop the radiant energy.

The test room was equipped with heating and cooling elements so arranged that the interior surfaces of the test room could be maintained at various temperatures above or below the bodily temperature, so that the surface temperature of the human body might be maintained at a temperature resulting in comfort, either by radiating heat to the body from the heated room surface, or by allowing the body to radiate its heat to the chilled room surface, as required for comfort.

All functions were practically independent of, and had little effect upon, the condition of the air within the room.

Dr. Mills claims that advantage of this method of maintaining comfort is to be found in the maintenance of comfort conditions while the room air conditions are allowed to remain practically at the outside air conditions. Result of this, says Dr. Mills, is that no shock nor ill effect upon the health results from entering the room which is conditioned, nor from going out of doors again.

Dr. Mills maintains that his tests indicate the well-known shock and undesirable effect upon health of entering and leaving conventionally conditioned spaces to be the result of the sudden change in environmental indoor to outdoor conditions, so that if comfort is maintained with indoor and outdoor air at identical conditions this fault of either winter or summer air conditioning is entirely eliminated.

In this connection it might be noted that the results of extensive "comfort" tests conducted during the past year by the research committee of the American Society of Heating and Ventilating Engineers indicate that the importance of "shock" due to entering and leaving conditioned areas during the summer time has been greatly exaggerated, as the tests showed that no actual ill effect could be detected, while the influence of shock upon comfort was shown to be of very brief duration.

Some difficulties which may be encountered with the "radiant heat" method of maintaining comfort conditions are:

A. Cost of extensive radiating surfaces and more bulky equipment as compared with the cost of the small, forced-air circulation air-conditioning unit with high heat transfer due to use of forced-draft heat transfer surfaces.

B. Cost, and interference with decorative schemes, of special room interiors suitable for heat radiating and absorbing purposes.

C. Discomfort from high or low air temperatures to portions of the body shielded from radiant energy from wall radiating surfaces by desks and other furnishings, or by clothing too light to afford protection against cold air, but sufficient to stop radiant heat from reaching the skin. Since radiant heat affects only the surface against which it strikes, it might be necessary to wear open-work clothes or go naked in order to be exposed to its comforting influence.

What About the 1937 Engineering Graduate?

Concern about the engineering graduate of 1937 led us on an extemporaneous trip in company with Lester Keilholtz (Chrysler air-conditioning engineer) from the "sit-down" regions of Detroit over the hills and away to the University of Michigan at Ann Arbor.

Finding upon arrival in the college town that our old friend, City Treasurer "Bill" Verner was in possession of no authentic information on the matter, an invasion of the very halls of learning themselves was deemed necessary.

A two-man inspection tour conducted by "Prof" Keeler (Heating & Ventilating Department head) through the departments for mass production of new model engineers still revealed nothing regarding final disposition of the finished product after its final assembly in June.

However, a liberal education in itself was the kaleidoscopic passing in review of innumerable bespectacled high-browish lads posed with scholarly stoop over such conventional implements of learning as drill presses, electric welders, and foundry moulds. No cap and gown regalia designates the engineering undergraduate. He wears a suit of jumpers—except in the theoretical sessions, sandwiched in between the hours of practice when he dons his old clothes.

But these evidences of mass production, as well as the enormous group pictures here and there showing previous graduating classes, spoke fluently of what seemed at first glance like the impossibility of making room in the world for so many specialists.

A later call upon a noted industrialist at his modest seven-bathroom home in the middle of its 300-acre, 300-cow estate was no help, but only added wonders of its own. At dinner, the conversation dwelt principally upon the probable outcome of the bout between "sit-downing" and the old Anglo-Saxon obsession regarding "property rights."

Professor Vincent (Diesel engineer) got in a word about his new water-cooled radial Diesel which weighs but six and one-half pounds per horsepower, which is said to be unbelievably smooth and quiet in operation, and which seems to be applicable as a compressor-drive for the isolated air-conditioning or refrigerating installations because of its space and weight saving, its low rotating speed, and the fact that condenser waste water can be used for Diesel engine cooling.

Eventually it appeared that neither Professor Keeler nor Professor Anderson (Mechanical Engineering head) felt sufficient interest in their "boys" to touch of their own accord upon their future outlook.

So at last the question.

"How can something be found for all of these new engineering graduates to do when they "step-off" this spring?"

The following answers came quickly:

"Every man in the graduating class already has a job."

"This year's demand for new graduates is greater than the supply."

So it already was settled, which explains the lack of interest in the question over in Ann Arbor.

How long ago was it that people were saying that higher education had gone too far, because more "grads" were being sent out than industry ever could use?

Central Air Conditioning For a Community

Since the cost of the small air-conditioning installation may exceed $1,000 per ton of refrigerating effect, while the larger installation may be purchased for not much more than $200 per ton, it appears that the occasionally proposed central air-conditioning system for groups of new residences may merit attention, since advantage could be taken of the inherently lower cost per ton of the larger installation.

Now that housing programs are the vogue, or at any rate popular topics of conversation, and since housing shortages are acute in certain localities, it would seem that wide awake real estate manipulators might thumb themselves a ride on the rising tide of prosperity by placing on the market blocks of select homes featuring a central plant for heating and cooling the buildings of the group and for supplying them with hot and cold water for domestic use.

Summer cooling and winter heating could be accomplished by the circulation of chilled and hot water, respectively, through the same system of piping and forced air cooling and heating units located in the various homes comprising the group.

With this arrangement, conventional equipment would be used throughout, while the additional first cost due to the summer-cooling function would consist only of the cost of the refrigerating equipment itself, which would be located in the central plant, because the piping system, circulating pump, and individual air-conditioning units would be required for heating in any event.

With proper design, the saving in cost effected through the use of a central system for heating the homes and their domestic water supply, and for the refrigeration of food, as compared with the total cost of individual systems for each home, should be sufficient to cover the cost of the additional refrigeration equipment necessary for summer-comfort cooling, especially since the same refrigeration equipment might be used for the cooling of the home and for preserving its food.

Thus it should be possible to provide all-year air conditioning, refrigeration of food, and heating of domestic water for a large group of homes by means of a central system for about the cost of winter heating, refrigeration of food, and heating of domestic water by individual systems in each home, so that the summer-cooling function would cost little or nothing.

At any rate, it seems possible that such a grouping of homes about some such central system arrangement may be the means of getting the cost per home of summer air conditioning down to more popular levels and of enabling progressive builders to realize a direct financial benefit from air conditioning.

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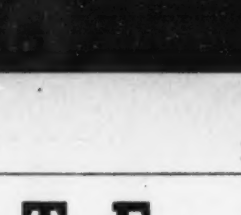

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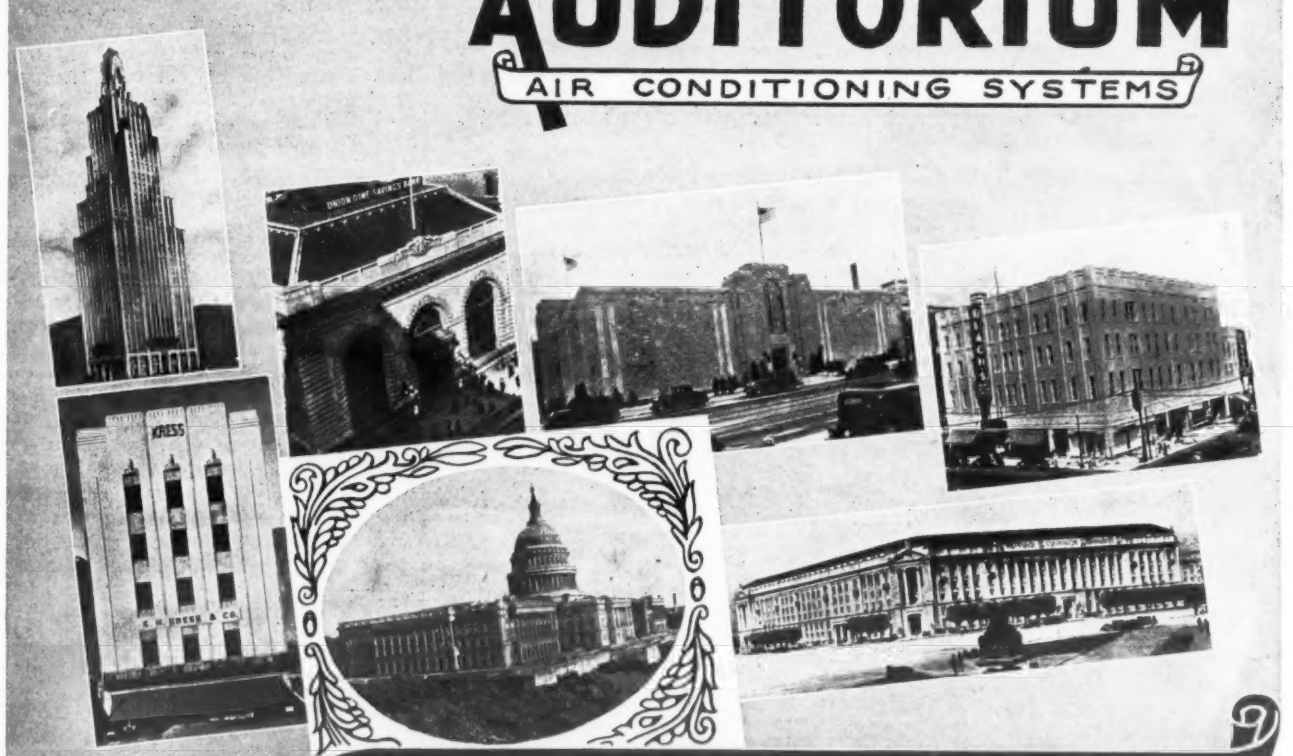

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Municipal Auditorium	*Kansas City, Mo.*	United States Court Houses & P. O.	*Various*	House Office Building	*Washington, D. C.*
Federal Reserve Bank	*Philadelphia, Pa.*	Field Building	*Chicago, Ill.*	R. C. A. Building, Radio City	*New York, N. Y.*
Chase National Bank	*New York, N. Y.*	Mandel Bros.	*Chicago, Ill.*	Amer. Tel. & Tel. Building	*New York, N. Y.*
Federal Land Bank	*Columbia, S. C.*	Wm. Filene Sons Co.	*Boston, Mass.*	Adler's Planetarium	*Chicago, Ill.*
Commercial Nat. Safe Dep. Co.	*Chicago, Ill.*	John Shillito	*Cincinnati, Ohio*		
Bank of New York Trust Co.	*New York, N. Y.*	Gimbel Bros.	*Pittsburgh, Pa.*		
Bank of America	*Bakersfield, Cal.*	Macy's Dept. Store	*New York & Atlanta*		
City Bank Farmers Trust Co.	*New York, N. Y.*	Higbee Dept. Store	*Cleveland, Ohio*		
WCAU Studio	*Philadelphia, Pa.*	St. Anthony Hotel	*Houston, Texas*		
WWJ Studio	*Detroit, Mich.*	Dearborn Inn	*Dearborn, Mich.*		
National Broadcasting Co.	*New York, N. Y.*	Mayflower Hotel	*Washington, D. C.*		
F. W. Woolworth Co.	*New York, N. Y.*	Williamsburg Inn	*Williamsburg, Va.*		
W. T. Grant Company	*Philadelphia, Pa.*	Archives Building	*Washington, D. C.*		
S. S. Kresge	*Philadelphia, Pa.*	U. S. Supreme Court	*Washington, D. C.*		
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Dr. C. A. Mills Explains Ways in Which Air Conditioning Affects Rate of Growth And Energy Levels in Human Beings

PHILADELPHIA — "Comfort, so largely considered in air conditioning of past years, can no longer be the only criterion upon which to base plans for future installations," declared Dr. C. A. Mills, professor of experimental medicine, University of Cincinnati, in his address on "Health Angles of Air Conditioning" before the annual convention of the Oil Burner Institute, Tuesday, March 16, at Convention Hall here.

"We know now that man's physical environment has a much deeper significance in his general welfare than mere comfort or discomfort," declared Dr. Mills. "It dominates most of the basic features of his entire existance. Its effects begin at conception and end only at death. His rate of growth and development, his energy level and vigor, his resistance to infection, his rate of bodily or mental breakdown—these are all largely dependent on the type of atmospheric environment under which he lives."

NEED FOR LOSING HEAT

"Of basic and primary importance to man and other warm-blooded animals, is the ease or difficulty with which heat may be lost from the body. So long as life goes on, heat must be produced in the body from the oxidation of foodstuffs. Every body function is based on this oxidation of food, and in every reaction that takes place heat is produced. This heat must be quickly dissipated to the surrounding environment, for the body is so constituted as to function well only within a very small temperature range around 98.6° F.

"If heat production cannot be dissipated, fever and death quickly result," declared Dr. Mills. "The body, however, normally adapts itself to the difficulty of heat loss by sharp curtailment in heat production. Voluntary efforts must be curtailed because of the feeling of discomfort that comes when attempting to lose excess heat against a hot environment.

EFFECTS OF CURTAILMENT

"But more basic changes also take place, changes of which the individual often is not conscious. As difficulty of heat loss is continued for days or weeks, and bodily activity and functions become suppressed in sympathy with the necessary reduction in heat production. The blood pressure falls and greater relaxation accompanies the general decline in combustion processes. And as these changes progress, there occurs a sharp drop in ability to fight infections which may gain a foothold.

"If the difficulty of heat loss be prolonged over months or years, we find that growth and rate of development in the young is impeded, and adult form tends to be smaller and more slender in type, with lessened vigor and reduced desire and capacity for accomplishment.

"The native of the tropics or subtropics may possess an inherent ability fully the equal of that found in temperate zone residents, but he is seriously hampered in effective expression of such ability by the difficulty he encounters in dissipating the body heat that such effort entails.

"Hence, we realize the vitally important place ease of body heat loss holds in human existence. Innate ability can become productive accomplishment only when it is backed by such an available energy level as is possible where body heat can be freely lost. Herein lies the real background of the outstanding progressiveness of temperate zone places.

ADAPTION LIMITED

"Body capacity to respond to ease of heat loss is not unlimited, however, for in polar regions, too much of combustion effort must go merely to keep the body warm. Vitality and energy do not rise progressively from tropical heat to polar cold, but reach a maximum in cooler temperate regions and show a distinct decline again as benumbing polar cold is encountered.

"All indices of vitality so far studied show a drop in northern cold down almost to subtropical levels. Much the same kind of slump in vitality occurs in cooler temperate regions in late winter, and is due to the body exhaustion induced by the changeable cold of the prolonged winter period. Death and sickness rates mount rapidly and conceptions fall."

CONTROLS GENERAL VIGOR

The general level of vigor and vitality in a population mass is thus seen to be determined largely by the ease or difficulty encountered in dissipating from the body the heat generated by every action that goes on inside, Dr. Mills pointed out.

"In tropical warmth, suppression of body activity is so extensive that capacity and desire to accomplish are held at low levels; the people possess a very low resistance to infection, and physical development is in general much retarded," explained the speaker. "But we see among very few of the evidences of body exhaustion and breakdown that are becoming major causes of death among people of cooler temperate regions. Arteriosclerosis, heart failure, diabetes, cancer, pernicious anemia, and a host of other diseases of breakdown in bodily function are yearly becoming more alarming to the medical profession by their continued increase in importance as causes of death. Mental breakdown, functional insanity and suicide likewise are showing the increasing mental stress that is resulting from the greater drive of the cooler regions.

PROBLEM IN CONDITIONING

"The conditioning of environment has as its chief problems, therefore, the facilitation of body heat loss in tropical warmth to allow a higher level of vigor for the depressed people there, and a curbing of the too rapid heat loss in cooler regions where man is being driven into too fast a pace by the basic urge of a high inner combustion rate. If your have ever seen a toxic goiter patient, with his extreme restlessness, you can appreciate just what it means to be driven by too active an internal combustion.

"In northern regions, then, the major consideration in conditioning indoor environments has to do with checking the rate of body heat loss and easing the body stress through the winter season. Summer cooling is needed for severe heat waves, but, in the main, northern people need the relaxation brought by moderate summer warmth."

HEATING NOT ENOUGH

Winter conditioning cannot concern itself with simple heating of indoor air, believes Dr. Mills. One of the most stressful features of winter weather for man is the suddenness and severity of change in temperature and barometric pressure as major storm areas pass across the continent. For a few days the temperature falls, the barometer rises and clear invigorating weather holds sway. Then a low pressure center approaches, the temperature rises and precipitation begins.

This continual repetition of changes in atmospheric environment adds greatly to the stimulation of winter cold, said the speaker, and to obtain relief from these outdoor changes, heating systems controlled to maintain fairly constant indoor temperatures have been devised.

CONTRASTS HARMFUL

"These indoor temperatures of winter, however, are so high above outdoor levels that we must face as great a change as storms bring everytime we go out from a heated room," Dr. Mills declared. "Thus, instead of lessening the drive of winter weather on our bodies by indoor heating, we are really intensifying it by maintaining such severe contrast between indoor and outdoor air.

'In still another way are we endangering our welfare by such contrasts. Respiratory and some other types of acute infections seem to be closely related to sudden weather changes and to body chilling. May it not be, therefore, that we are predisposing ourselves to such infections by being forced to meet such sharp contrasts in the air breathed everytime we go outdoors from a heated room.

NEW METHODS NEEDED

"There is, I believe, an urgent need for the development of conditioning methods, for both winter heating and summer cooling, whereby heat loss from the body can be properly controlled without regard to air temperatures or humidity. For a couple of years I have had an idea such an end could be achieved through radiant heat means, and this winter I have had a chance to demonstrate that it can actually be done.

"Suffice it to say that one can be made quite comfortable at air and wall temperatures of 92-95° F. by removal of the body's heat as radiant heat; and likewise at low air temperatures (30-50° F.) comfort can be readily achieved by radiant heat introduction.

REFLECTIVE SURFACES

"Heat reflective wall surfaces are an essential part of the setup, for various experimenters have found the cost of cooling or warming all wall surfaces too prohibitive for practical application. With heat-reflective wall surfaces, however, wall temperatures become unimportant,—in fact the walls assume air temperature levels. Here, then, is a hint of changes in conditioning methods that will greatly lessen fuel consumption by obviating the necessity of heating air mass or building materials.

"The point I do wish to stress is the desirability of lessening the contrast between outdoor and indoor temperatures for both winter and summer conditioning. The elimination of these contrasts will, I believe, do much to lessen the prevalence of respiratory troubles.

CONTROLLING PRESSURE

"This is not the place to discuss pressure control in buildings, but I would just like to mention that pressure changes accompanying our storms are probably responsible for great damage to and interference with, our body functions. Preliminary hints that have come into view have indicated that pressure changes may be equally as disturbing as the changes in temperature. I have a feeling that within a few years we will be as much interested in pressure control inside our dwellings as we are now interested in temperature."

PROBLEMS SUMMARIZED

In closing, Dr. Mills declared that too much emphasis cannot be put on the fact that atmospheric environment is a factor of very great importance in our daily and year-around welfare; that its importance rests mainly on its relation to rate of body heat loss, with all the secondary effects that are so closely bound up with heat production in the body, but in controlling this heat loss by winter heating, there is great need to devise ways that do not produce sharp contrasts in temperature or moisture content between indoor and outdoor air.

Malay Farmers Will Air Condition Cows To Get More Milk

NEWARK—Cows in hot and humid Singapore are living in a barn cooled by air conditioning today after a move by Malayan dairymen to reduce the adverse effect of climatic conditions on milk production.

This step is in line with experiments conducted by the agriculture departments of various states including California, Georgia, Wisconsin, and Missouri in cooperation with the U.S. Department of Agriculture.

The U.S. Department, for instance, conducted experiments in Wisconsin recently which showed cows to be most comfortable at a temperature of 50° to 55° F. Temperatures in Singapore and vicinity average above 80° the year around, according to the U.S. Weather Bureau. Peak temperatures frequently touch 100° and above. Humidity soars in the damp, moist climate, adding to discomfort.

Dairy experts have noted that cows imported from the United States and Australia have had a premature reduction in milk production when introduced to the terrific heat of the Straits Settlement, just off the equator.

15-TON CARRIER SYSTEM

To meet this situation, dairymen from the Singapore Dairy Farm, largest in the settlement, recently ordered a 15-ton air-conditioning system from the Carrier Corp.

In commenting on experiments conducted to increase milk production, E. J. Perry, extension dairyman of the New Jersey State College of Agriculture, said:

"A review of experiments showed that a decided reduction in milk yield results when cows are kept in an air temperature above 85° F. for more than 48 hours without the cooling effect of a breeze."

No data has been collected on the use of air conditioning to increase milk production; dairymen will watch the Singapore experiment with interest, Mr. Perry said.

HEAT REDUCED YIELD

Experts at the Singapore farm soon found that cows exposed to terrific heat gradually decreased their milk production. Air conditioning was decided upon in lieu of various other methods heretofore tried to keep cows contented.

Tests in the United States had showed that cows were kept in better health, resulting in increased milk production, when relief was given from heat.

"It was found that during the very hot weather the temperature of the air in a field of green alfalfa was 10° F. lower than in a dry open corral," Mr. Perry explained. "The cooling effect was produced by the evaporation of water from the growing plants.

In the Carrier system in the Singapore barn, the cooling of air will be accompanied by reduction of humidity, which more primitive systems can not accomplish.

"High humidity of the air may cause a drop in the milk yield," Mr. Perry warned, although tests conducted at the University of California indicate that humidity has little effect on the cow.

The Singapore cows will be cooled by 6,000 c.f.m. of conditioned air or 360,000 cu. ft. every hour.

While a quantity of fresh milk is available in Singapore at all times, many families are forced to use a substitute composed of skim milk powder, butter and water. If the Singapore Farm experiment is successful, it is hoped to place a larger supply of fresh milk on the market.

The Carrier installation was made by United Engineers, Ltd., Carrier distributors for Malaya, under the personal supervision of Charles F. Hill of Boston, Mass., Carrier engineer.

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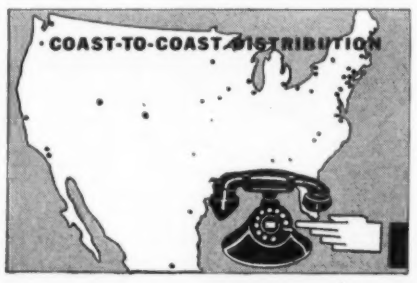

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Air Conditioning Orders Booked Total $4,874,223 in January

Item	Value of Orders Booked Jan., 1937	Dec., 1936
Total	**$4,874,223**	**$4,399,693**
Air Conditioning Group—Total	**$2,635,849**	**$2,085,951**
Unit Systems—		
Self-contained (shipped substantially complete)	448,985	272,850
Not self-contained (shipped in sections), including refrigerating or cooling medium	651,713	750,591
Central-station Systems, excluding installation if installed—		
Human comfort (including refrigerating or cooling medium sold separately or otherwise for air conditioning)*	849,280	323,484
Industrial (including refrigerating or cooling medium sold separately or otherwise for air conditioning)*	73,412	416,564
Refrigerating or cooling medium sold to contractors or other distributing outlets (not manufacturing air-conditioning equipment) for air-conditioning systems, when such knowledge as to the application is available	356,408	94,451
Air washers, including pumps and motors and controls where furnished	75,350	78,239
Air filters (not including sales of filters used with machinery other than fans)	16,302	14,304
Humidifiers	164,399	135,468
Fan Group—Total	**$1,365,128**	**$1,167,964**
Fans, including bearings, pulleys or couplings (if furnished)—		
For public and semi-public buildings	130,765	106,533
For general industrial uses	428,682	408,209
For mechanical draft	216,902	151,625
For jobber stocks and unknown uses	130,421	78,795
Small housed and propeller fans—		
Direct connected small housed blowers with motors and control (merchandise motors)	146,223	145,860
Propeller fans, direct connected and belted (for ventilation only)	229,443	205,934
Driving mechanism for general fan use (not reported above)—		
Electric motors and controllers (manufactured or jobbed)	73,546	61,567
Steam engines and steam turbines (manufactured or jobbed)	9,146	9,441
Unit Heater Group—Total	**$ 873,246**	**$1,145,778**
Industrial Type Unit Heaters, including heating element and motors where furnished—		
Equipped with propeller-type fans	349,549	646,629
Equipped with blower-type (centrifugal) fans	144,504	171,977
School-Room Type Unit Heaters, including heating element and motors and control where furnished	122,057	92,299
Indirect Heating Surface (not including unit heater surface)—		
Steel pipe coil type (manufactured or jobbed)	10,675	10,781
Cast iron type (manufactured or jobbed)	6,292	6,673
Copper or aluminum type (manufactured or jobbed)	240,169	217,419

*Includes incidental equipment, such as temperature, motor, humidity, and electrical controls, dampers, outlets, etc., as are sold with each.

— AIR CONDITIONING NEWS —

Knighton Reports on Economic Value of Air Conditioning to Individuals and Businesses as Determined by Poll

PHILADELPHIA—While surveys show that air conditioning is worth money to the merchant who uses it, individuals covered in a countrywide poll by Nash-Kelvinator placed a real cash value on the advantages of personal comfort, J. K. Knighton, Kelvinator air-conditioning sales manager, told an audience at a session of the Oil Burner Institute Convention here last week.

"The value of air conditioning to the individual," said Mr. Knighton, "is such a highly personal thing that heretofore it has been rather difficult to establish a definite dollar value for the many and varied benefits. It was interesting to note (in the survey) that the user's opinion of dollar value was in direct ratio to income."

Among annoying conditions associated with hot weather, Mr. Knighton included such negative factors as sleepless nights, bodily fatigue, mental sluggishness, loss of time, energy, and efficiency, and undue perspiration. Not to be overlooked, he said, is the annoyance of insects and dust coming in the open window, and the general irritability caused by extreme weather.

YEARLY VALUE PLACED

"Grouping all of the factors together," he said, "the survey discloses that people in what we might term the higher income group place a yearly value of $300 to $400 to avoid these most annoying conditions. In the lower income group, the idea of value ranged from $200 to $300.

"The idea of air conditioning as regards health was significant. Not that air conditioning could in any sense be considered as a panacea for all ills, but purely on the basis that when the individual is comfortable, resistance to disease is at its highest.

"Heat robs us of our vitality—our resistance—leaving us wide open for the attack of disease. These factors make air conditioning good health insurance, and, by the same token, if illness does exist, then a shorter convalescent period would seem to be assured. There is the relief from hayfever and pollen asthma, and the relief from nervous disorders that are accentuated by extreme weather. Purely from the standpoint of health insurance the expressed values ranged from $50 to $200, and from the standpoint of hayfever and pollen asthma relief the maximum average was $500 a year.

ELIMINATING NOISE

"There is noise elimination—a by-product of air conditioning. The windows and doors are closed, shutting out street noises, clanging streetcars, automobile horns, crying newsboys; or it might be the clatter of typewriters in an adjoining office. Again the expressed values from this standpoint ranged from $50 to $200.

"If word of mouth advertising is the only legitimate means of establishing your identity, air conditioning can play a most important part because the people that visit you even though their stay might be confined to 20 minutes, enjoy this comfort just as much as you do, and their appreciation is favorably expressed among their friends and acquaintances.

"Guided by the experience of others, any individual can use this simple method of determining the economic justification for air conditioning in the home or the office," Mr. Knighton said.

Turning to the hard cash motive for air conditioning, always foremost in the business man's consideration of this improvement, Mr. Knighton said that a second Kelvinator survey among many different types of establishments, concerned only with the user's bookkeeping experience, had definitely shown the profit possibilities of the equipment, and the justification for purchasing it.

"Public appreciation of air-conditioned stores and offices," he said, "expresses itself first by increasing store traffic, and the experience of hundreds of store owners proves that air conditioning does attract customers. For instance, ladies ready-to-wear stores on the average had an increase in sales per day of 34%, while the sale of ladies' corsets was increased 32%.

"In the restaurant field our survey disclosed an increase in patronage of 26% for cafeterias, while cocktail rooms enjoyed a national average increase in patronage of 40%.

COMMERCIAL VALUE

"These increases apply only to the cooling season. However, with buying habits established, a portion of this increase is retained by the merchant in the form of permanent patronage throughout the year. The value of air conditioning from a summer comfort cooling standpoint extends from the last day you require heating in the early spring until the first day you require heating again in the late fall.

"Our survey definitely shows that customers do linger in air-conditioned shops and stores, which results in an increase in the amount of the average transaction. Comfortable buyers don't hurry. Then, too, sales people have an opportunity to show their merchandise, and they have the energy and patience to do a better selling job.

"A portion of the new customers attracted by summer air conditioning becomes permanent, because buying habits created by more comfortable shopping conditions in the summer time result in permanent patronage.

COSTS REDUCED

"How can air conditioning reduce the cost of doing business? First, lost sales are reduced to a minimum. Fewer people walk out without buying. Then there is a reduced soilage loss through the elimination of perspiration stain and dust and dirt, providing cleanliness in the handling of merchandise.

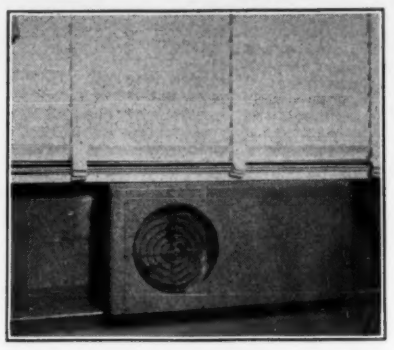
"Air conditioning has proved to be an important factor in helping to eliminate loss of time on the part of store personnel due to illness; it improves the entire staff physically as well as mentally; it increases efficiency.

"In addition to our desire to be comfortable, we are beginning to appreciate a quiet, restful atmosphere as well, and certainly a store or shop that eliminates distracting outside noises creates an atmosphere more conducive to good business.

"Whether or not air conditioning yields the greatest possible return is dependent entirely upon the promotional effort the store manager puts behind the idea. In other words, air conditioning for the merchant should be a vehicle for the strongest promotional efforts he has ever put forward, if he is to enjoy its benefits to the fullest. An economic survey of the business will enable the merchant to determine whether or not it is the thing to do, and more—it will show where the greatest value lies so that he can direct his promotional effort in the proper channels.

"Such a survey of a business will disclose other factors as well. It dictates the type of system best suited; tells whether or not from a value standpoint, the system should be designed for summer comfort cooling only or should provide year-around air conditioning. In other words, the profit value survey to business, becomes the economic justification for the purchase of air conditioning."

1937 Northwind



New Northwind portable unit air conditioner marketed by Pleasantaire Corp.

Pleasantaire Continues Portable Cooling Unit; Plans More Promotion

NEW YORK CITY — Pleasantaire Corp. this year is continuing with minor improvements the Northwind portable summer air conditioner introduced on a small scale in this territory last year, according to President R. F. Roper.

Tests made in individual homes last summer have been supplemented by more recent tests in Electrical Testing Laboratories, Mr. Roper said. The company is convinced that the market is ripe for unit air conditioning on a large scale, he added, and has built up reserve stock in anticipation of hot weather business.

The Northwind unit is built of standard parts, designed for easy servicing, and operates independently of outside connections except for plugging into the ordinary lighting circuit.

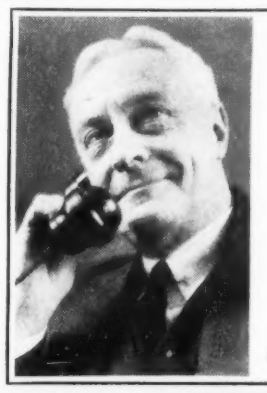
Northwind is completely portable, and rests upon the window sill of the room to be conditioned. The lower sash of the window fits tightly upon the top of the unit, over a ribbon of sound-deadening felt. Openings below the sash on either side of the machine are closed by special collapsible wings, fitted to either side of the unit itself.

Installation is as simple as a radio set, only connection necessary being plugged into the lighting circuit. A flip of the switch produces cool air, dehumidified at the rate of 300 c.f.m., it is claimed.

Advertising planned for the product this spring includes a national magazine of large circulation, newspapers, trade papers, and point-of-sale posters and descriptive circulars, Mr. Roper said.

Daniels Joins Boston Utility Commercial Sales Bureau

BOSTON—Julius Daniels, president of the Air Conditioning Bureau and a past president of the Illuminating Engineering Society, has been appointed head of the commercial bureau in charge of sales and promotion work for Edison Electric Co. here.



"Yes, that's right—Copelands. We tried them in three of our stores and the results were so completely satisfactory that we now have installed them throughout our entire chain."

That's the way Copeland users talk. And that's why Copeland Commercial Refrigeration units are so easy to sell.

Write for our Sales Plan

COPELAND

REFRIGERATION CORPORATION . . . DETROIT, MICHIGAN

Year 'Round Dualaire Conditioning

DUALAIRE

BEAUTIFUL ROOM UNITS

DO IT ALL!!

HEAT — COOL — FILTER

Humidify — Dehumidify — Circulate

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DUALAIRE, Inc., South Bend, Ind.

CONDENSERS
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McCORD RADIATOR & MFG. CO.
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DEPENDABLE NOT SPECULATIVE

ENGINEERS LIKE THEIR EFFICIENCY

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SULPHUR DIOXIDE

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Synopsis of Service Manual

On this page is a continuation of Chapter 7 of the COMMERCIAL SERVICE MANUAL by K. M. Newcum, author of the popular MASTER SERVICE MANUAL.

A summary of the previous instalments follows:

Chapters 1 and 2 were omitted from the NEWS, as they are of basic material which has previously been covered in the paper, but they will appear in the completed book.

Chapter 3, Cylinders, Valves, and Safety Devices for Refrigerants—Aug. 5, 12, and 19.

Chapter 4; Methods of Transferring Refrigerants to Smaller Cylinders—Aug. 19.

Chapter 5, Drying of Refrigerants—Aug. 26.

Chapter 6, Commercial Condensing Units—Sept. 2, 9, 16, 23, 30; Oct. 21; Nov. 4, 11, 18, 25; Dec. 2, 9, and 16.

Chapter 7, Evaporators and Refrigerant Control Valves—Dec. 23, 30; Jan. 6, 13, 20, 27; Feb. 3, 10, 24; Mar. 3, 10, and 17.

Skinner Co. Redesigns Line of Pipe Clamps

SOUTH BEND, Ind.—M. B. Skinner Co. has redesigned its line of pipe clamps, and has installed equipment which tests each clamp under a pressure of 3,000 lbs. before it leaves the factory.

The company's line of clamps is designed for stopping leaks in steam, vapor, oil, chemical, ammonia, brine, and other types of pipe lines, high or low pressure. Clamps may be installed while the pipe lines are in service, except upon extremely high-pressure lines.

COMMERCIAL REFRIGERATION SERVICE

Installation of Expansion Valves for Proper Control of Commercial Coils

CHAPTER 7—Evaporators & Refrigerant Controls (Cont.)

BY K. M. NEWCUM

A very interesting case coil installation is shown in Fig. 149. The topmost fin coil refrigerates the top shelf; the second coil the main shelf and the bottom coil the bottom storage space. Note the expansion valve feeds into the top coil first then down to the second and finally the third or bottom coil. The thermo bulb is connected to the next-to-last tube on the bottom coil using the last tube as a dryer coil.

The question of where to expand, that is, connect the expansion valve to feed into the top of a coil or the bottom, is one that is much discussed and disagreed.

On the Frigidaire wet expansion coil shown in Fig. 146, the liquid is always admitted at the bottom and the suction taken off at the top. It is also important that this type of coil be perfectly level both from front to back and side to side, and the headers be horizontal.

Note the refrigerant circuit in the coil in Fig. 136. Assume the coil to be only one vertical row of tubes, one over the other with a natural gravity drop from top to bottom as illustrated. What is to prevent the liquid from traveling by gravity and by the force of the incoming liquid through the coil too rapidly and contacting the thermo bulb before it has had time to use its refrigeration effect? In other words, during the on-cycle incoming liquid at high velocity has an unrestricted downward path directly to the thermo bulb and suction line.

It is possible and highly probable that unused liquid would contact the thermo bulb before the evaporator were down to the correct temperature.

This would cause the valve to close until the bulb warmed up again and then upon opening the liquid would again rush downward to the bulb causing the valve to short cycle again.

'STARVING' THE COIL

The service man would then have a tendency to lower the expansion valve setting, reducing the back pressure or in other words starve the evaporator to prevent liquid or cold gas contacting the bulb until the coil should be down to near the cutout point.

This lowering of adjustment and the resultant starving of the coil materially reduces the capacity of the evaporator and usually results in the top fins frosting heavily because in reality that is the only part of the coil being supplied with liquid or saturated vapor. The balance of the coil is starved.

To reverse the refrigerant circuit through the coil and admit the liquid in the bottom would result in the approximate condition shown in the Kelvinator coil in Fig. 150. Note that in this evaporator with the expansion valve connected to the bottom the coil is more than one-half flooded with liquid refrigerant.

The liquid or saturated vapor, in order to get to the end (top) of the evaporator and the thermo bulb, must travel upward against a natural head. For this reason there are no unnecessary slop-overs and the action of the thermo valve is steady and almost all of the entire evaporator surface is constantly supplied with low-pressure liquid or saturated vapor.

Note the liquid level in the Kelvinator coil in Fig. 151. It is equipped with a vertical header. The liquid is supplied to the header via tube No. 8 so that the liquid level is constantly maintained. However, the coil in Fig. 150 represents nearly this same flooded condition without the header.

PLACE OF INSTALLATION

Referring to Fig. 140, note that the tubes in coils number 1, 2, and 3 are so arranged that the liquid flows from front to back through the entire top row thence to the second row and so on downward through the entire coil.

With this arrangement by attaching the expansion valve to the top, the liquid would flow across the top then trickle down to the second row and so on down. Add to this the velocity of the incoming liquid and it can be seen that it might be possible for the liquid to travel down to the bulb and short circuit the expansion valve before the evaporator was properly chilled.

If, however, the flow of liquid was from the bottom of the coil upward a semi-flooded condition would result and a consequential higher coil efficiency.

Assume now that coil No. 1 Fig. 140 was so fabricated that the circuit was from the inlet through the top tube to the back of the coil, then down to the tube immediately below and so on down through vertical row of tubes on the left, then upward through the second vertical row of tubes thence downward again through the third row of tubes, and upward again up through the fourth or last row of tubes.

This arrangement would be known as the progressive up and down flow. It can be seen that the second row acts as a head for the first row of tubes, while the fourth row in turn acts as a head for the third row of tubes. In this instance admitting the liquid to the top would be equally as good as flowing in through the bottom.

PRINCIPLE OF INSTALLATION

The point is that if the coil is so arranged that it does not provide a natural gravity flow downward the expansion valve may be successfully connected to either the top or bottom of the coil. If the coil is so designed that the liquid can trickle downward unobstructed then it is believed that a much higher coil efficiency may be obtained by attaching the expansion valve to the bottom of the coil.

Attaching the valve to the bottom of the coil, thus maintaining actual liquid in the coil, will require a larger refrigerant charge in the system. It is recommended that if the flow is changed on any installations now in operation that a liquid indicator be installed in the liquid line to definitely determine if there is a liquid seal between the expansion valve and the liquid receiver.

Bubbles in the liquid circuit when the system is in operation will indicate a shortage which might not be detected otherwise. This is especially important with methyl chloride or Freon-12 SO_2 not as critical, and the frost line method is usually fairly accurate.

EXCEPTIONS

Exceptions to the rule of flowing into the bottom may be taken where the coil is very large and the actual resistance of the many return bends, etc. may tend to prevent a free flow of liquid downward.

It is also more important to favor upward flow in a deep coil, as for example coil No. 1, Fig. 140, than in a shallow wide coil.

A material aid to both bottom and top expansion evaporators is what is known as a drier coil.

A drier coil is simply a length of copper tubing within the refrigerator extending beyond the thermo bulb. Its purpose is to allow the expansion valve to be adjusted to the lowest possible superheat or, what is the same thing, to allow the entire evaporator to frost up to and slightly beyond the thermo bulb. Any frosting beyond the bulb will be absorbed by or in the drier coil within the refrigerator thus preventing frosting outside the refrigerator.

Use as an example Fig. 136. Assume that the tubing (suction line) left the refrigerator a few feet from its connection to the evaporator. It is obvious that to prevent frosting or sweating outside the refrigerator, the frost line could not extend beyond the thermo bulb even when the refrigerant tem-

(*Concluded on Page 17, Column 1*)

3-Coil Installation

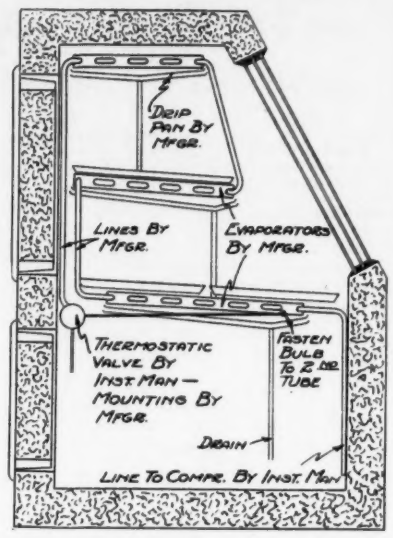

DRIP PAN BY MFGR.
LINES BY MFGR.
EVAPORATORS BY MFGR.
THERMOSTATIC VALVE BY INST. MAN — MOUNTING BY MFGR.
FROSTED BULB TO 2 SUC. TUBE
DRAIN
LINE TO COMPR. BY INST. MAN

Fig. 149—Three-coil installation in display case.

Kelvinator Coils without Header

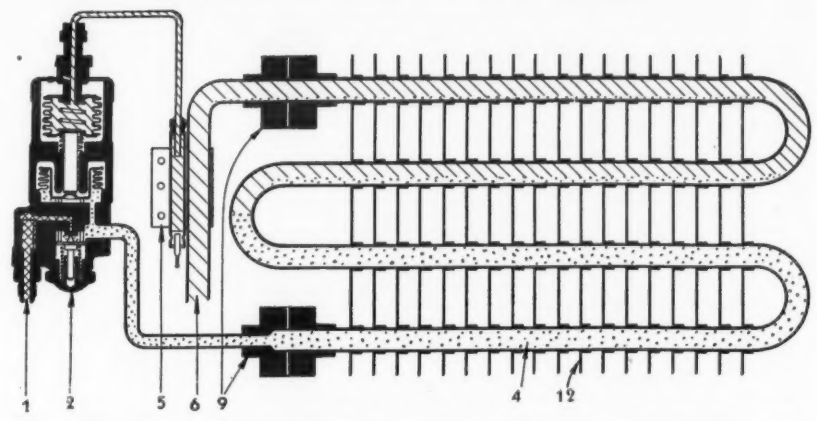


Fig. 150—This coil maintains almost same liquid level as Fig. 151, although no header is used.

Use of Header on Commercial Coil

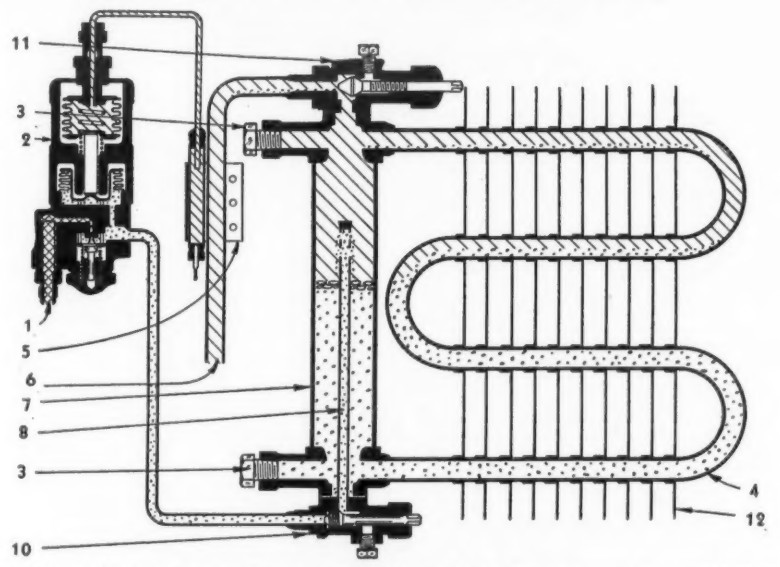
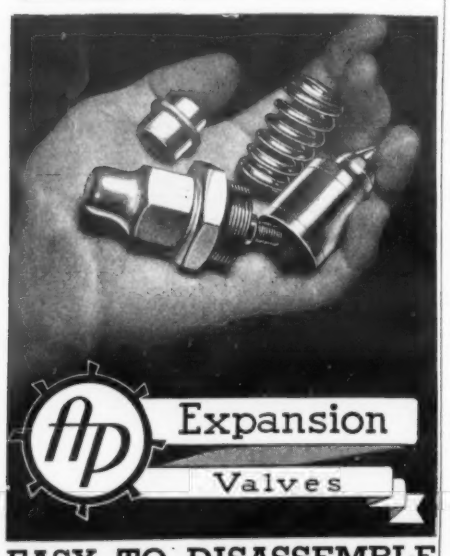


Fig. 151—Liquid is supplied by tube (8) so that liquid level is constantly maintained.



EASY TO DISASSEMBLE AND CLEAN

Simply remove large hexagon nut on bottom of valve and parts drop into your hand. A-P Expansion Valves are available in a full range of sizes up to 15 tons "Freon" Capacity, and for all modern low-pressure refrigerants.

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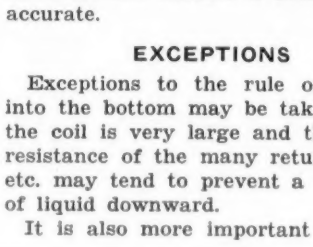
800 ROOMS
WITH BATH FROM $2 SINGLE
Robert Hensley.. Manager
FACING GRAND CIRCUS PARK



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DETROIT, MICHIGAN ..... TULLER
DAYTON, OHIO ..... MIAMI
COLUMBUS, OHIO ..... CHITTENDEN
COLUMBUS, OHIO ..... FORT HAYES
TOLEDO, OHIO ..... FORT MEIGS
CINCINNATI, OHIO. FOUNTAIN SQUARE
CANTON, OHIO ..... BELDEN
INDIANAPOLIS, INDIANA ..... ANTLERS
ANDERSON, INDIANA ..... ANDERSON
TERRE HAUTE, INDIANA. TERRE HAUTE
ASHLAND, KENTUCKY ..... VENTURA
OWENSBORO, KENTUCKY. OWENSBORO
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GENERAL
K-15
Quiet, Dependable
REFRIGERANT CONTROL

NEW LOW PRICES EFFECTIVE MARCH 20th
For complete Engineering data, write for Catalog M 184

This full ported, quiet GENERAL CONTROLS valve is built to the rigid requirements of refrigerant control. The current-failure solenoid is fully-powered to provide instant full-opening. The valve is packless in construction and has but two moving parts which are tooled to the closest tolerances. Closing with the flow, the line pressure is on top of the seat, thus adding to the seating pressure and providing a perfectly tight shut-off. All internal parts are corrosion-proof to Freon, Sulphur Dioxide, water, Methyl Chloride and similar refrigerants.

GENERAL CONTROLS
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267 5th Ave., New York City, N.Y.
1370 Harrison St., San Francisco, Calif.
421 Dwight Building, Kansas City, Mo.

Use of Accessories on Commercial Refrigeration Coil Installations

(*Concluded from Page 16, Column 5*)

perature and pressure is at its lowest point or near the cutting out point on the low pressure control.

As a result the tail end or in some cases as high as 20% of the coil would be starved of effective refrigerant and consequently 20% of the evaporator surface would be wasted.

To remedy this particular condition, assume the bulb be left where it is: That a twenty-foot length of tube the same size as the evaporator tube or suction line were connected to the evaporator outlet and coiled around within the coil compartment, and the suction line connected to this twenty-foot drier coil.

The expansion valve then could be readjusted to frost right up to and slightly beyond the bulb, and this excess liquid passing the bulb would finally be vaporized in the drier coil.

To obtain the greatest amount of efficiency with the least number of feet of drier coil tubing, it should be placed in the warmest possible place. In a walk-in cooler the warmest place would be above the coil in the warm-air circuit.

Assume in this particular example, Fig. 136, a twenty-foot drier coil were installed and extended upward and spread out over the top of the coil to be affected by the incoming warm air. (It should not touch the coil proper.)

This would serve a dual purpose. First it would act as a drier coil and second it would act as a trap, in its manner, to help maintain a liquid level at all times in a coil which before was operating starved.

It might be possible to further improve the efficiency of this example by removing the bulb from the present location and reinstall it on or inside the drier coil about one half of the way up between the top and bottom of the coil. In other words, remove the bulb from the coil proper and install it in a vertical position if possible from several inches to one foot from the coil proper on the vertical drier coil as it leaves the evaporator.

Remember always to keep the expansion valve proper in a warmer location than the thermo bulb.

Another useful accessory is the heat interchanger or heat exchanger both being coined words and meaning the same thing.

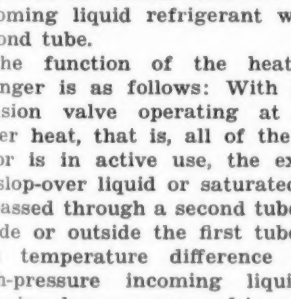
The location of a heat interchanger is the tail end of the evaporator. It is so designed that the cool suction gas from the evaporator within a tube is placed in contact with the warmer incoming liquid refrigerant within a second tube.

The function of the heat interchanger is as follows: With the expansion valve operating at a low super heat, that is, all of the evaporator is in active use, the excessive or slop-over liquid or saturated vapor is passed through a second tube either inside or outside the first tube. With this temperature difference of the high-pressure incoming liquid and outgoing low-pressure refrigerant, the liquid gives up its heat to the colder suction gases. This exchange of heat warms up the suction gases thus preventing a frost back outside the box and at the same time cools the ingoing liquid.

This principle of exchange is clearly noted in Fig. 152.

To obtain the greatest efficiency from the heat interchanger, the counterflow principle should be employed. This means that the liquid should enter the exchanger at the same end as the suction gas leaves the exchanger. This would result in warmer end of the first fluid being in contact with the warmer end of the second fluid.

Heat Interchanger



USED AS A HEAT INTERCHANGER BETWEEN LIQUID REFRIGERANT AND VAPOR

Fig. 152—Counterflow heat interchanger at tail end of evaporator.

Fedders supply what is called "Make your own" heat interchanger fittings from which any length of heat interchanger desired may be made. This assembly is illustrated in Fig. 153.

Fedders Assembly

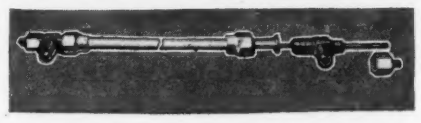


Fig. 153—Assembly for making any length heat interchanger desired.

They also recommend the use of one foot of heat interchanger tubing for approximately 250 B.t.u. per hour evaporator capacity. This refers to ¼-inch and ⅝-inch tube combination having ¼-inch and ½-inch SAE male flare connections.

Heat interchanger fittings are also obtainable for solder (sweat tube) joints.

It must be clearly understood that neither drier coils or heat exchangers actually in-them-selves add to the capacity of a system. Their prime purpose is to allow the entire coil to be utilized, the super heat to be lower; the suction pressure to be increased —all of which increases the capacity of both the lowside and condensing unit. The actual purpose of the drier coil or heat interchanger is to take care of the slop-over of saturated vapor or liquid to prevent frosting outside the refrigerator. Their use is recommended.

Gilmer Honors Krauss for 25 Years of Service

PHILADELPHIA — Marking the twenty-fifth anniversary of his service with L. H. Gilmer Co., President John S. Krauss was guest of honor when some 60 executives, department heads, and employe representatives recently gave a testimonial dinner at the Warwick hotel.

Floral pieces were presented to Mr. Krauss by Local No. 37 of the United Rubber Workers Union, and by women employes of the company. Brief remarks were made by employes representing each group.

A full week's vacation with pay for all factory workers with service over a year, and days off with pay for lesser periods, were announced at the dinner, together with reports covering other phases of the company's employe relationship program—the Beneficial Association, the annual outing, and the engineering and production school for employes.

C. H. Bridenbaugh, secretary and treasurer, presided at the dinner, and Hamilton R. Disston, vice president, was toastmaster.

Dresser Offers Line of Compressor Fittings

BRADFORD, Pa.—S. R. Dresser Mfg. Co. has announced a line of compression fittings designed to simplify joint-making and repair work on both inside and outside piping, for oil, gas, water, air, or other industrial lines.

Threading, grooving, and flaring of joints is eliminated by use of the fittings, Dresser engineers say. Inserting the plain-end pipe into the fitting, and tightening two threaded follower nuts are the only operations required, they claim. Resilient "armored" gaskets at each end of the fitting are compressed around the pipe, forming a positive seal.

The complete line of fittings includes standard and extra-long couplings, ells (both 45° and 90°), and tees, in standard steel pipe sizes from ½ to 2 inches, I.D., black or galvanized.

Insto-Gas Introduces Portable Heating Equipment Line

DETROIT—A new type of portable heating equipment, known as Insto-Gas Torches and Furnaces, has been made available to refrigeration and air-conditioning service men by Insto-Gas Corp.

The furnaces and torches are fueled by liquefied petroleum gas. The fuel is stored in small portable cylinders to which the various pieces of equipment may be attached. The furnaces and torches are sold outright, but fuel cylinders are leased for a nominal fee. All normal maintenance and repairs on cylinders are provided by the company without cost to the customer.

Electrical Associations Sponsor Handbook of Interior Wiring

NEW YORK CITY—A "Handbook of Interior Wiring Design," containing specifications, details, and plans of complete wiring design, has been produced by a joint electrical industry committee under the chairmanship of E. A. Brand, Niagara-Hudson Power Co., Buffalo. It is being released nationally under the sponsorship of eight electrical societies and associations.

Every type of interior wiring design has been treated in the handbook.

Tables of data, diagrams, check lists, sample specifications and contract forms, essential surveys, practical design data, terminology, and miscellaneous facts are included.

A thorough survey of residential wiring is made in the first section of the book. Following this survey there is an analysis of the electrical requirements of each room, a check list for quick reference, and a basic specifications form.

"Wiring Standards for General Occupancies" are also discussed. This section includes design standards for multi-family dwellings, commercial, industrial, and public buildings, and power wiring. Standards of outlets, switch control, circuiting, panel board, feeder, and service entrance design for general occupancies are followed by discussion of the conditions of power wiring adequacy for these occupancies.

Action toward such a handbook as this originated with the sales committee of Edison Electric Institute in June, 1935, when Mr. Brand, representing the wiring committee of the Institute, was asked to organize a joint committee to undertake the task.

The "Handbook of Interior Wiring Design" is being issued by the Edison Electric Institute in joint sponsorship with the Artistic Lighting Equipment Association, Illuminating Engineering Society, International Association of Electrical Inspectors, National Electrical Contractors Association, National Electrical Manufacturers Association, National Electrical Wholesalers Association, and Radio Manufacturers Association.

Sheahan Conducts School for Texas Service Men

MINERAL WELLS, Tex.—R. E. Sheahan, General Electric factory representative, conducted a training school for refrigerator servicemen from Mineral Wells, Jacksboro, and Decatur here Mar. 9.

Other representatives who attended were Neal Harmon, Dallas G-E district manager, and J. C. Webb, Dallas, Texas Power and Light Co. service engineer.

Graybar Names 3 Kelvinator Dealers in Dayton Area

DAYTON—Elder & Johnson Co. department store and Dayton Maytag Co. have been appointed Kelvinator dealers here, according to George Bertke of Graybar Electric Co., distributor.

Main Auto Supply Co., Xenia, Ohio, has also been appointed a Kelvinator dealer.

Karlan Adds Westinghouse To Appliance Line

TOPEKA, Kan.—The C. A. Karlan Furniture Store is adding Westinghouse refrigerators to the Frigidaire line it has been handling, announces Ross Hill of the appliance department. Hotpoint and Monarch electric ranges, Maytag and One-Minute washers, and Philco and Sparton radios are also sold by the store.

Kistler Takes on Kelvinator Appliance Line

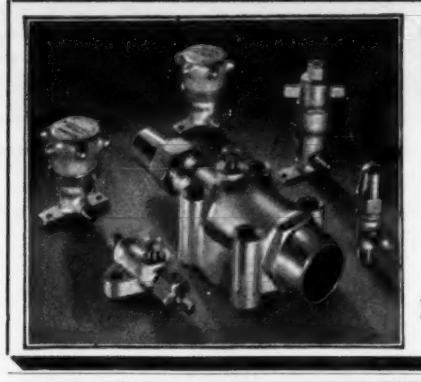
TOPEKA, Kan.—Kistler Home Appliance Co. has been appointed Kelvinator dealer here, announces Manager George Kistler. The firm also handles the Crosley line.

Electrolux to Sponsor Radio 'March of Time' Program

EVANSVILLE, Ind.—Electrolux refrigerators will go on the air April 15, when Servel, Inc. assumes sponsorship of the "March of Time" radio program for the summer quarter. Forty-four stations will carry the program, which is broadcast on Thursday from 10:30 to 11 p.m., EST.

AuWerter Joins Norge Design Department

DETROIT—Russell AuWerter, formerly art director for C. E. Rickerd advertising agency, has joined the design department of Norge division, Borg-Warner Corp.

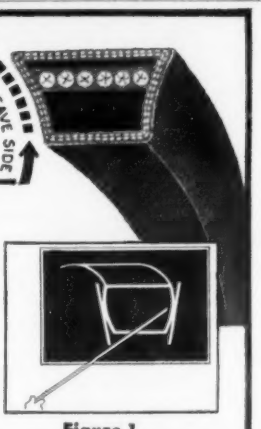


PERFECTION
Refrigeration Valves
are Certified to Excel

Ask for catalog covering complete line of Valves, Fittings, Condensing Water Regulators, and Parts for Compressors.

PERFECTION REFRIGERATION PARTS CO.
HARVEY, ILLINOIS

This Simple patent is the secret that has made a SILENT V-BELT . . . . and here's the reason—



When a straight-sided V-belt bends around its pulley there is tension on the top of the belt and compression on the bottom. This makes the side walls bulge outward —as shown in figure 1, below.

The Gates Belt is built with a patented concave side. The bulge, due to bending, simply straightens the concave side to a precise fit with the sheave groove as shown in figure 2.

This exact fit naturally prevents slipping. No slipping means a SILENT belt, a belt that wears longer, a belt that does not heat and therefore does not stretch.

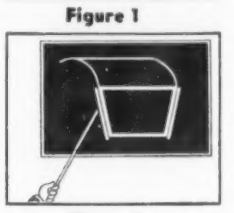


Figure 1

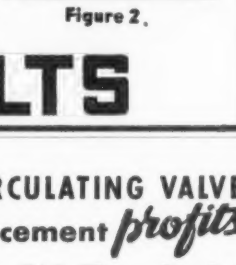


Figure 2.

BELT GUIDE — FREE

The Gates Belt Guide is the recognized national authority on correct belt fit for ALL Refrigerators, Washing Machines, Pumps, Stokers, etc., etc. FREE from your Jobber or the GATES RUBBER CO., Denver, Colorado.

Write Today!

GATES BELTS

TAG WATER CIRCULATING VALVES
For Service Replacement profits

The sound design of the TAG Water Circulating Valve for water cooled compressors shown here is best reflected by its wide acceptance as standard equipment on so many prominent makes of commercial machines. Likewise, its utility as a preferred item for both customer satisfaction and service replacement profits is undisputed.

There are other equally notable TAG Controls and Test Equipment for Refrigeration Service that you should know about. Send for a copy of the new TAG Catalog No. 1136-25.

ASK YOUR JOBBER ABOUT TAG WATER CIRCULATING VALVES, CONTROLS, & TEST EQUIPMENT.

C. J. TAGLIABUE MFG. CO.
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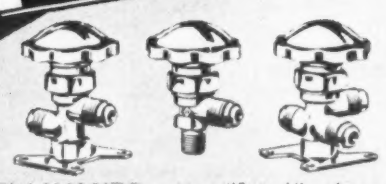
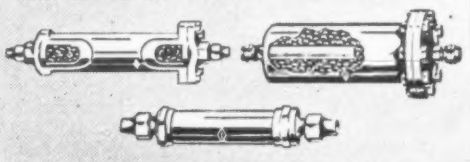
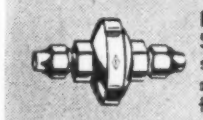
Announcing—extensive additions to the Imperial line



NEW VALVES—New "Sylpak" valves with shorter bonnet to fit 4" conduit box—also many other new valves.

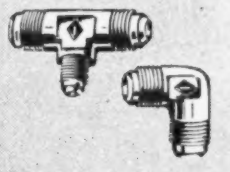


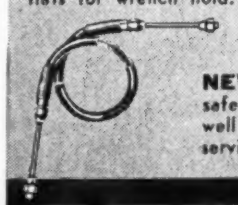
NEW DEHYDRATORS—Cartridge refill type, dispersion tube type, a small low priced dehydrator, and a line of large steel shell dehydrators 4 inches in diameter.



NEW STRAINERS—Sealed strainer with mesh screen and asbestos sack, a small size strainer, and a forged brass line strainer.

NEW FITTINGS—Large number of new sizes and all tees and elbows will have flats for wrench hold.





NEW TOOLS—New safety charging line as well as a wide variety of service aids.

SERVICE men, jobbers, and manufacturers who have seen the new items in the Imperial line have shown a lot of enthusiasm. On every hand word has gone out that the Imperial line is "tops" in completeness and quality.

You will want the new Imperial catalog No. 77-F that covers all of these new items and other products for air conditioning and refrigeration work. This catalog will be a great help to you in your service work.

Be sure to specify IMPERIAL when you order valves, fittings, tools, charging lines, floats, strainers, dehydrators, and other items from your jobber. You will find these new items in jobbers stocks, but if you have the slightest difficulty in getting Imperial items in your locality, just mention that fact when you write for your new catalog.

IMPERIAL BRASS MFG. CO.
565 S. Racine Ave., Chicago

ORDER FROM YOUR JOBBER

IMPERIAL Refrigeration and Air Conditioning Products

— BUYER'S GUIDE —

SUPPLIERS WHO SPECIALIZE IN SERVICE TO THE INDUSTRY

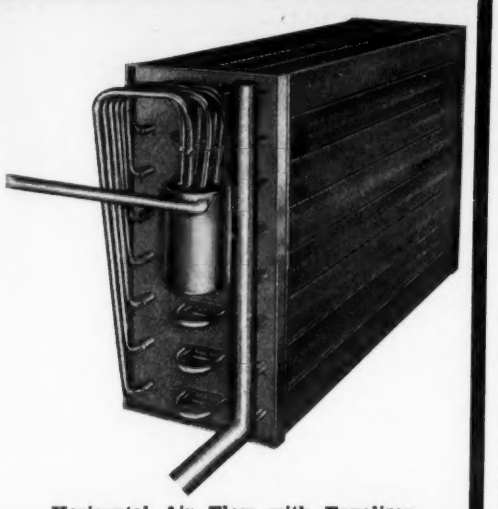
PEERLESS
AIR CONDITIONING COILS

FOR CENTRAL SYSTEMS

Peerless Air Conditioning Coils with "Rifled Tubing" form the most efficient low side on the market for central system air conditioning installations. Coils are available in capacities from one to forty tons with three different shapes for each standard capacity to permit their use in any installation.

Equipped with EQUALIZER for Horizontal Air Flow

All Peerless Horizontal Air Flow Coils (excepting single circuits) are equipped with the Peerless Equalizer Feed insuring 100% distribution of refrigerant to every section of the coil. Hence, there are no "dead spots" in a Peerless coil—every inch of coil surface is working.



Horizontal Air Flow with Equalizer

PEERLESS of AMERICA Inc.

ESTABLISHED IN 1912 AS THE PEERLESS ICE MACHINE CO.

New York Factory	Main Factory—General Offices	Pacific Coast Factory
43-20 34th Street	515 West 35th Street	3000 S. Main Street
Long Island City	Chicago	Los Angeles

Chain Stores in Baltimore Make Air-Conditioning Installations

BALTIMORE — Recent major air-conditioning installations in this city include the local units of three five-cent-to-$1 chains, J. G. McCrory & Co., the Silver chain, and W. T. Grant Co.

Maison Annette, recently reconstructed women's specialty apparel shop, and the local Pep Boys store, which handles auto supplies, radios, and hardware, have also recently installed air-conditioning equipment.

New M-H Booklet Points Out Types of Conditioning Systems

MINNEAPOLIS — The need for teaching the public the difference between "AC" (air conditioning) and "SC" (summer cooling only) is stressed by Minneapolis-Honeywell Regulator Co. in its latest mailing piece, just issued.

Use of the company's booklet, "This Thing Called Automatic Heating and Air Conditioning," is suggested as one means of educating the public in the "plain English" of air conditioning and what Minneapolis-Honeywell calls its "Big If"—control.

Following its last year's policy, Minneapolis-Honeywell is promoting distribution of the booklet through an extensive national advertising campaign.

Conditioning Boosts Restaurant Business 36%, Henderson Says

KANSAS CITY—Air-conditioned restaurants analyzed in a nationwide survey showed an average increase of 36% in annual business volume, an average increase of more than one fourth in number of hot season patrons and a rise of 53% in the size of the July-August check, Executive Vice President William B. Henderson of Air Conditioning Manufacturers Association told chamber of commerce members here March 17.

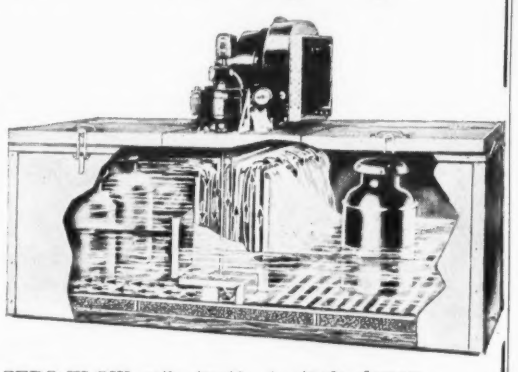
Praising Kansas City for its adoption of air conditioning, Mr. Henderson recalled that of the city's nearly 600 installations, 230 are in residences alone. Almost 200 industries throughout the United States regularly use air conditioning in solving their production problems, he said.

Rapid Milk Cooling of

NEW

ZERO-FLOW

Means Rapid Dealer Sales

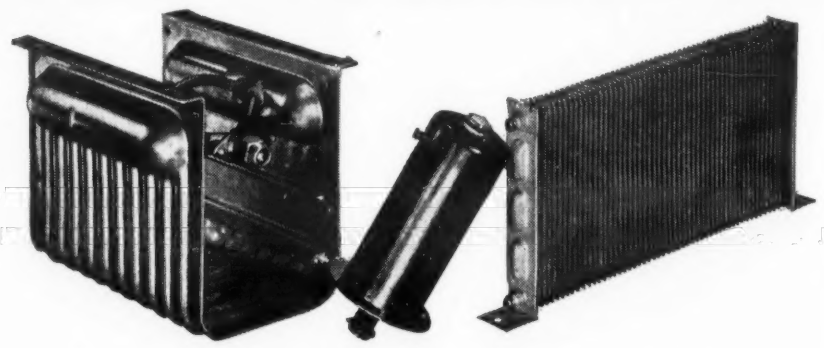


DEALERS find the **new** ZERO-FLOW sells itself. A single demonstration proves the extra convenience, economy and efficiency for the modern dairyman. ZERO-FLOW's new cooling principles will meet the strictest milk temperature requirements. Regardless of the number of cans, both evening's **and morning's** milk have constant level of flowing, icy-cold water, during cooling period, encircling cans up to their necks (made possible by revolutionary construction of Verti-Coil and Circulator in cooling compartment). ZERO-FLOW assures **rapid** cooling of milk to below 50° with minimum running time on compressor. ZERO-FLOW means rapid SALES for dealers because of exclusive cooling features never before available. Write for proposition today.

WILSON CABINET CORP.

114 MAIN ST. SMYRNA, DEL.

SUPPLYING THE REFRIGERATION INDUSTRY



Evaporators, Receivers, Condensers, Compressor Domes, Compressors and Mechanical Parts. Also "Houdize," a perfected process for permanently uniting ferrous or non-ferrous metals.

OAKES PRODUCTS CORP. North Chicago and Decatur, Ill.

HOUDE ENGINEERING CORP. Buffalo, New York

DIVISIONS OF HOUDAILLE-HERSHEY CORPORATION

General Executive Offices: Detroit, Mich.

Dayton V-Belts are the logical choice for all types of appliances, because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating. A nearby distributor carries a complete stock.

★

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO
WORLD'S LARGEST MANUFACTURER OF V-BELTS

★ Dayton ★

V-BELTS

— AIR CONDITIONING MADE EASY —

More Hints on Installation Practice for Air Conditioning Engineers & Dealers

SECTION NO. 10 (Cont.)

DON'TS

BY F. O. JORDAN

Selecting Equipment— Types of Systems

7. *The Wall Type Air-Conditioning Unit:* this unit is intended for use in offices, beauty shops, small lunch rooms, etc., where floor space for the floor type unit is limited or unavailable, and where it is desired to locate the condensing unit at a remote point, in case the direct expansion method is used. However, either direct expansion, refrigerated water, or well water may be used as the refrigerating medium as stated above.

As with the floor-type unit, proper space must be left for service piping. The location of the wall-type unit within the conditioned space is somewhat more important than with floor-type equipment. This unit must be so located that the air stream which it discharges practically dies out at the wall opposite the unit at such a height that no draft will strike the occupants. The air stream should be so directed that even distribution over the entire conditioned space is obtained. These matters are explained more fully in Section 5.

8. *The Suspended Type Air Conditioning Unit:* The smaller sizes of this type of unit are intended for use in offices, beauty parlors, small lunch rooms, etc., where floor space for the floor-type unit is limited or unavailable.

The larger sizes are intended for use in larger conditioned spaces, such as restaurants, theaters, department stores, etc. This unit may be installed within the conditioned space, or may be concealed behind furring, or located outside a partition and provided with grilles and short ducts as necessary for air supply to and recirculation from the conditioned space.

If desired, the larger sizes may be installed remote as ready-built standardized central systems, and distribute to and recirculate from the conditioned space through proper duct work. Specifications and data for the design of the duct system are given in Section 21.

Since the larger size of suspended type unit generally will be used for conditioned spaces of concentrated occupancy, it generally will be necessary to draw in a proportion of outside air through the unit so that proper fresh air and recirculating connections and dampers should be provided.

Air distribution through the conditioned space should be as noted above for the wall-type unit and as described under Section 5.

As with the floor and wall-type units, either direct expansion, refrigerated water or well water may be used as the refrigerating medium and proper space must be provided for service piping.

9. *The Central Air-Conditioning System*—The central system generally is used for serving a single large space such as an auditorium or department store. In the case of the project consisting of many rooms, especially if the load periods of all rooms do not vary together, difficulty may be experienced in obtaining satisfactory control of the conditions in all rooms, although arrangements similar to those described under the heading, "The Commercial Forced Air Circulation Heating System" of Section 7, may be used to eliminate this trouble.

PARALLEL INSTALLATIONS

C. *Condensing Units in "Parallel"—Don't* connect two or more condensing units into the same system of refrigerant piping. While it *may* work, this practice frequently has caused trouble, one unit "hogging" the oil and leaving the other unit with dry bearings.

If it is desired to serve an installation of central-system coils with more than one condensing unit, divide the coils into independent sections, and let each section, together with its condensing unit and refrigerant piping, form a complete and independent system. Such an installation will be more trouble-free, without sacrificing any of the flexibility of the multiple condensing-unit job.

D. *Location of Condensing Unit—Don't* locate the condensing unit above the air-conditioning unit unless unavoidable. Since the oil in the system tends to collect at the low point, the condensing unit should be located at the low point, since it is for the use of the compressor that the oil is intended.

If an air-conditioning unit must be located lower than the condensing unit, the suction line from that unit should be sloped downward 1 inch per 100 feet to a point below the condensing unit. At that point the suction tubing should be bent to form a seal or pocket from which it should rise vertically to the compressor intake.

With such an arrangement, the oil will tend to collect at the bottom of the seal and be pumped over in "slugs." All rises in the suction line must be sized so that the velocity is never less than 1,000 f.p.m.

MULTIPLE SYSTEMS

E. *The Multiple Air-Conditioning Unit Installation*—In the system where more than one air-conditioning unit is served by one condensing unit, *don't* use any method of control by means of which more than 60% of the load may be removed from the condensing unit, except when the entire load is removed.

In cases where the air-conditioning units are all in the same room, the entire system may be controlled by a properly located room thermostat, operating to control the compressor operation through the action of one or more solenoid valves located in the liquid refrigerant mains.

In cases where the air-conditioning units are located in different rooms in which the load periods fluctuate simultaneously (as in the case of a group of rooms with the same exposure so that sun effect reaches all at the same time), the compressor action may be controlled by one room thermostat as described for installations with which the air-conditioning units are located in the same room. In such cases, the thermostat should be located in the room which has the *longest* load period.

In cases where the air-conditioning units are located in two or more rooms, the air conditioning units may be divided into two groups, and each group may be controlled by one room thermostat, provided that the groups are such that the load upon the condensing unit cannot be decreased by greater than 60% by the cutting out of service of one unit or group of units.

With such an arrangement the load periods in the room which are controlled by each thermostat should have the same variation, and the thermostat in each case should be located in the room having the *longest* load period in its group.

In cases where the rooms cannot be divided into two groups in which the load periods in the rooms in each group are approximately the same, an indirect system using circulated cold water as the refrigerating medium should be used.

With installations which are operated under the control of two thermostats, as described above, the refrigerant piping system must be divided into two separate systems so that each group of air-conditioning units which is controlled by one thermostat is served by a separate system of refrigerant piping. Each system must be controlled by its thermostat operating through a solenoid valve located in the branch liquid refrigerant supply main to that system.

The branch refrigerant suction line to each system must be provided with an automatic suction-pressure regulating valve or back-pressure valve which will prevent variations in suction pressure on the air-conditioning units in its system. This is necessary in order to prevent a very undesirable or disastrous fall in refrigerant temperature in one system when the other system is out of service.

CENTRAL STATION JOBS

F. *The Central System—Don't* attempt to serve several rooms which have different load period fluctuations with a central system which is controlled from one point only.

In cases where the duct system is to be used for air distribution in one room, the entire system may be operated under the control of one room thermostat.

In cases where the duct system is to serve more than one room, all rooms having the general period of load fluctuation, the entire system may be operated under the control of one room thermostat located within the room whose load period is the longest.

(Concluded on Page 19, Column 1)

Thermo Valves
Expansion Valves
High Pressure Float Valves
Low Pressure Float Switches
Magnetic Stop Valves

ALCO

Air Conditioning MADE EASY

Presented below is the conclusion of Section 10 "Dont's" of AIR CONDITIONING MADE EASY, by F. O. Jordan, air-conditioning editor of the NEWS, and former assistant chief engineer of Airtemp, Inc.

The following instalments of the manual have appeared in the NEWS:

What is Air Conditioning?—Sept. 23.

Section 1, Introduction, and Section 2, Definitions and Simple Thermodynamics—Sept. 30.

Section 3, Coil Performance—Oct. 7 and 14.

Section 3A, Water Cooler Performance—Oct. 14.

Section 4, Condensing Unit Performance—Oct. 21.

Section 5, Air Movement and Ventilation Requirements—Oct. 28.

Section 6, The Complete Air-Conditioning System for the Cooling Season—Nov. 4, 11, 18, and 25.

Section 7, Heating—Dec. 2, 9, 16, 23, 30, Jan. 6, 13, 20, 27, Feb. 3, 10, 17, 24, March 3, and 10.

Section No. 10, Don'ts—March 17.

Air Conditioning to Conquer Dust Studied in Kansas

KANSAS CITY—Air conditioning is being studied by western Kansas school officials in an effort to meet conditions imposed by dust storms and periods of unusual warm weather during the school season.

J. W. Radotinsky, local architect, has incorporated air conditioning in the Sherman Community high school, now under construction at Goodland, and the proposed Decatur Community high school at Oberlin.

Officials of other school districts are reported investigating air conditioning, both in planned new buildings and in those new in use.

G-E Sales in New Jersey Enjoy Huge Increase

NEWARK—General Electric air-conditioning equipment sales in New Jersey increased 410% in January and 300% in February over the corresponding months of 1936, according to announcement by Mark Winans, general manager of Northern Air Conditioning Corp., distributors.

— BUYER'S GUIDE —
SUPPLIERS WHO SPECIALIZE IN SERVICE TO THE INDUSTRY

Find Out About This Revolutionary New Control - - - Ranco Type R-M

Ranco Type RM Control offers a combination of important features never before available in a single unit! It has fractional degree differential. It has a very high electrical rating—1 h.p. 110-220 V. AC and 1 h.p. 115-230 V. DC. It maintains accurate settings. Small, strong and extremely simple.

Type RM Control is ideal for Air Conditioning, Unit Heaters, Unit Coolers, Walk-in Boxes, Milk Coolers, Water Coolers, Freezer Counters, Ice Cream Hardening Cabinets—in fact, any application requiring low differential, accurate settings and high electrical capacity. Write today for Bulletin 695.

RANCO, Inc., Columbus, Ohio.

— AIR CONDITIONING ENGINEERING —

Installation Methods for Refrigerant Tubing & Steam or Hot Water Piping

(Concluded from Page 18, Column 5)

In cases where the duct system is to serve more than one room, the various rooms having different periods of fluctuation, it is necessary to provide each room with individual temperature control. This may be done by providing each room with a room thermostat which operates a shut-off damper in the air supply duct to that room.

Disadvantage of this type of control is that the air circulation in the room is shut off during a portion of the time, so that stagnation results. A better method is to make use of a double-duct system with two supplies to each room. With this system, one portion of the system supplies air at about room temperature while the other carries cold, dry air. Each room is provided with a room thermostat which operates a set of mixing dampers for each room so that a constant volume of air is supplied, while the cold and warmer air supplies are so proportioned that the desired temperature level is maintained in the room.

With either system, a suction pressure regulating valve must be used to prevent load variations from affecting the suction pressure on the air-conditioning coil, while some means should be used so that the load on the condensing unit cannot be decreased more than 60% while it is in operation.

REFRIGERANT TUBING

G. *Refrigerant Tubing*—When running the liquid refrigerant tubing, *don't* use such small sizes or attempt to lift the refrigerant so high, that insufficient pressure is left at the expansion valve to feed the refrigerant through it.

When running the suction line, *don't* attempt to economize to the extent of using such small sizes of tubing that the suction pressure drop so reduces the compressor capacity and efficiency that a larger compressor must be used. Refrigerant tubing should be properly sized according to the Tables in the Section 21.

In cases where several air-conditioning coils or units are to be served by one condensing unit, it is advisable to run the liquid and suction lines to a distributing panel from which branches should be run to each air-conditioning unit, except in cases where such units are grouped closely together when a single branch may be run to each group. All branches should be valved at the header on the distributing panel so that portions of the system may be repaired without shutting down the entire plant.

The valves in the branch suction lines may also be used for obtaining a more exact balance between the capacities of the various air-conditioning units and the loads to which they are subjected by regulating their respective refrigerant temperatures through partial throttling of the branch suction lines.

H. *Covering on Refrigerant Lines—Don't* leave refrigerant lines uncovered at locations where they are likely to sweat and drip on furnishings or materials which might be injured thereby. However *don't* cover these lines unnecessarily.

Remember that the purpose of covering refrigerant lines is not to prevent heat loss, but to prevent sweating at undesirable locations. Some type of light covering should be used which will prevent the formation of condensation but will have little insulating value.

Usually, the suction line need be covered (if at all) only for a short distance from the coil. Covering the suction line throughout its length with heavy covering has little or no good effect if the suction gas is superheated to the usual temperatures occurring in actual practice, as the line usually will not sweat under such conditions.

If the expansion valve setting is improper so that liquid refrigerant is being passed over into the suction line, such covering will have the very undesirable effect of insuring that such liquid will not be evaporated in the suction line, but will carry back to the compressor crankcase. The undesirability of this is discussed in Section 4.

In actual practice the liquid line will not sweat or frost except in some cases on the leaving side of a solenoid valve, where such sweating or frosting usually is of such short duration (only for a few seconds after the closing of the solenoid valve) that no actual dripping occurs. However, the liquid line may be covered if desired without actual harm.

I. *Insulation on Miscellaneous Piping—Don't* neglect a good insulating covering on cold water supply, hot water supply, or steam supply lines. Return lines need not be covered unless exposed to freezing temperatures, or to materials to which their heat would be injurious.

J. *Heating Piping*—When installing the heating system, *don't* run the piping so that air or condensation can be trapped. Steam piping should be pitched downward in the direction of steam flow about 1 inch per 100 feet of run. When necessary to pitch a branch steam line opposite to the steam flow, the pitch should be 1 inch per 4 ft. run. (See Section 7.)

Steam system return piping should be pitched 1 inch per 20 ft. of run.

Water piping should be pitched so that it will drain.

Combination float and thermostatic air vents should be placed at all high points in low-pressure steam-heating mains, and on "dry" gravity-return mains at the point where they drop to "wet" returns.

Float type air vents should be provided at the high points in all water systems.

Traps should be provided for draining the condensation from the low points in all steam systems and heating coils. Traps for low pressure steam heating systems must be of a type which will pass air and condensation, such as the thermostatic return trap, or the low pressure inverted bucket trap with thermostatic air bypass.

Valves should be placed at all branches. This is especially true of water distribution systems, as throttling valves are necessary for obtaining proper distribution.

Air Conditioning—Is It Plumbing or Steamfitting?

MILWAUKEE—Whether air conditioning should be classified as plumbing or steamfitting was the subject of a two-hour argument before the common council's utilities committee March 9.

The dispute developed months ago over installation of air-conditioning equipment in a Milwaukee store and was aired before the committee during consideration of proposed revision of water department rules which have been in force since 1872. Representatives of the plumbing and steamfitting crafts argued the issue.

Henry P. Bohmann, superintendent of the water department, was instructed by the committee to confer with the state board of health and the attorney general's office for an interpretation of the state and city codes. The city attorney's office is also to study the code and recommend changes to preclude the possibility of future jurisdictional disputes.

Neeson Appointed Chief Engineer of Airtemp

DAYTON—Charles R. Neeson has been appointed chief engineer of Airtemp, Inc., air-conditioning subsidiary of Chrysler Corp. R. G. Wyld, associate of Mr. Neeson during the past year and a half, has been named executive engineer.

Mr. Neeson joined Airtemp in September, 1935. Formerly with York Ice Machinery Corp., he at one time was director of American Society of Refrigerating Engineers. He is responsible for the development of the "All-In-One" commercial air conditioner recently introduced by Airtemp.

General Heat to Occupy New Quarters about May 15

BOSTON—General Heat & Appliance Co., distributor for Delco-Frigidaire automatic cooling and heating equipment, will move to new and larger quarters at 594 Commonwealth Ave. about May 15, states Louis E. Gardner, treasurer.

Distributor of Delco products for the past five years, the firm has moved twice before this to accomodate its expanding business. In its new location, the company will have double the amount of floor space of that being used in its present quarters.

The building into which the company will move is being completely renovated and modernized, and will contain a large display room, home insulation department, sheet metal and fabricating shop, and warehousing space. An extensive parking space will be available at the new location.

Sears to Build Air Conditioned Store in Baltimore

BALTIMORE — Sears, Roebuck & Co. plans to build a $1,000,000 air-conditioned store on the 15-acre tract now occupied by the Samuel Ready School here, providing the City Council approves a pending bill to change the school property to a commercial classification under the city's zoning law.

Definitely modern in design, the proposed building will be completely air-conditioned. The store will be windowless, all illumination being provided by indirect lighting.

If present plans materialize, the store will be devoted entirely to retail trade, and will handle no mail order business.

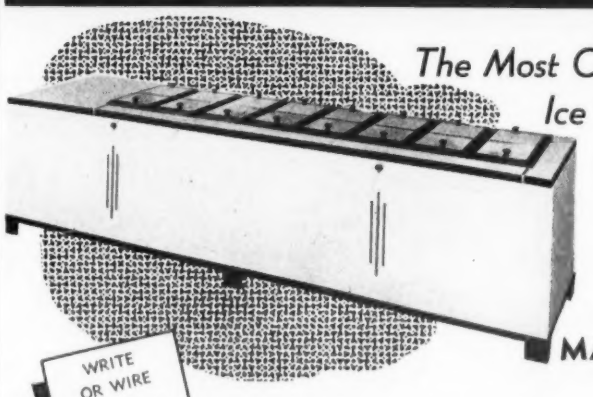
The KOCH ECON-O-CASE
The Newest KOCH PRODUCT
CORKBOARD INSULATION
ALL-STEEL CONSTRUCTION
Built for SERVICE Priced to SELL
TRIPLE GLAZING · RUBBER DOORS
DOUBLE DUTY · 6½, 8 and 10 ft. LONG

In addition to standard products, Koch now offers the Econ-O-Case, selling at the very lowest price level, and worthy of the Koch name in every respect. This new display case, sold only through distributors, opens a vast new market for Koch equipment. Write for details.

Economical IN COST Economical IN OPERATION

KOCH REFRIGERATORS
North Kansas City, Missouri
WRITE TODAY FOR PROPOSITION

ICE CREAM CABINETS



The Most Complete Line of Ice Cream Cabinets in the Industry

BUY YOUR CABINETS FROM THE MANUFACTURER

WRITE OR WIRE FOR YOUR CATALOG TODAY

With or without compressors. Will operate using either Freon, Methyl Chloride or Sulphur Dioxide

Schaefer MINNEAPOLIS MINNESOTA EST. 1929

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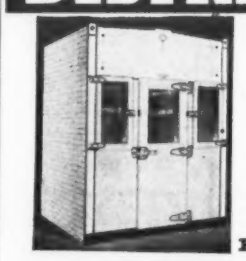
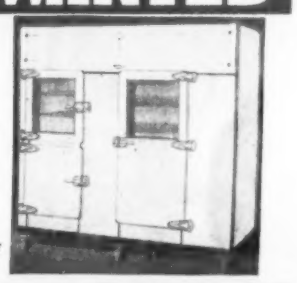


Percival equipment meets every requirement of the modern food store.

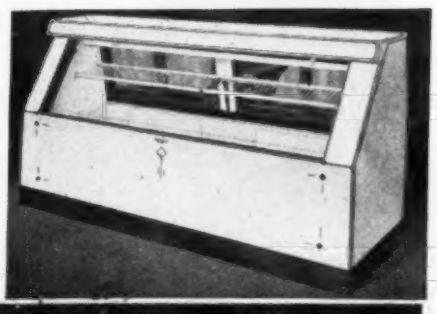
For mechanical refrigeration only



Percival's complete line will increase your sales of electrical refrigeration equipment and offer added earnings.

Desirable territories still available. Write for complete information.

1886-1937
51 years of service to meat markets.



C. L. PERCIVAL CO.
DES MOINES, IOWA

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SUPPLIERS WHO SPECIALIZE IN SERVICE TO THE REFRIGERATION AND AIR CONDITIONING INDUSTRIES

NATIONAL DOUBLE DUTY CASES

Built extra heavy, lasting many years longer than other makes. 3" to 4" cork insulation, 5" to 6" walls, porcelain inside and outside, triple plate glass front, triple glass rubber sliding doors, chromium hardware, all material highest grade, with or without coils or platters, two or three shelves, prices low, dealers wanted, few territories open. For more information write

NATIONAL REFRIGERATOR CO., Philadelphia, Pa.

4-STAR CASE & COOLER FRANCHISE

SHERER

Consider the outstanding features that the Sherer Franchise offers you.

★ A COMPLETE LINE of CASES and COOLERS, engineered to a high peak of perfection.

★ NEW EQUIPMENT constantly under test and development. New developments open new fields for compressor sales.

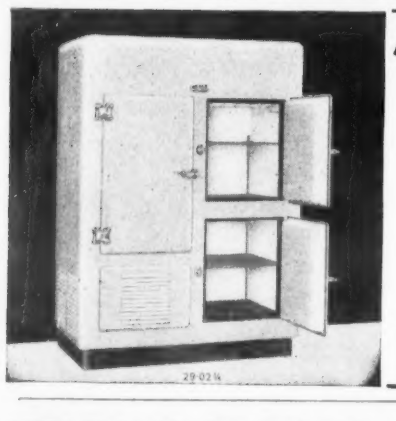
★ LAYOUT DEPARTMENT—layouts for food store modernization programs without cost or obligation.

★ ADVERTISING—Sherer Cases and Coolers regularly advertised by direct mail and in leading food trade publications.

Addition of the Sherer Case and Cooler Franchise to your present line is **your** move for '37. Desirable territories still available. Write for catalog and franchise details. **Be sure to tell us which territory interests you.**

SHERER
DISPLAY AND STORAGE EQUIPMENT FOR RETAIL FOOD STORES
SHERER-GILLETT CO.
MARSHALL, MICHIGAN

Exclusive Case and Cooler Mfgrs . . . Serving Food Retailers Since 1852



STREAMLINED Beauty

THIS LINE SELLS ON SIGHT

Weber brings the result of 35 years of successful manufacturing experience . America's most beautiful line of Refrigerator Cases and Commercial Cabinets. Exclusive territories now open — Complete financing plan

Established 1902 *Cable Address "Weberco."*

WEBER SHOWCASE & FIXTURE CO., INC.
5700 Avalon Boulevard Los Angeles

AND NOW— A 45 Cu. Ft. Refrigerator

The 650—Companion to the popular 350 Model

A six-door Refrigerator, with storage capacity of 45 cu. ft. Equipped with solid or glass display doors in top section. 3" approved insulation, re-tinned steel shelves, extra heavy chromium hardware, and choice of DuLux or Porcelain finish.

Sufficient shelf space in 3 lower compartments for 21 cases of beverage, and enough height on top shelf to accommodate 24 oz. bottles.

Greater Capacity, yet it occupies but 13¾ sq. ft. of floor space.

GLOEKLER MANUFACTURING COMPANY
429 Fourth Avenue • Pittsburgh, Pa.

TYLER'S WELDED STEEL *Cases*

● 1937 line offers wide variety and sensational values. 6 big new features and iron-clad guarantee. Only Tyler gives one-piece "welded steel" construction, 100% insulation. Wonderful sales opportunity. Most talked of and fastest selling line on market. WRITE today.

TYLER Sales-Fixture COMPANY
Dept. E, NILES, MICHIGAN

SIX BIG NEW FEATURES

Cordley ELECTRIC WATER COOLERS

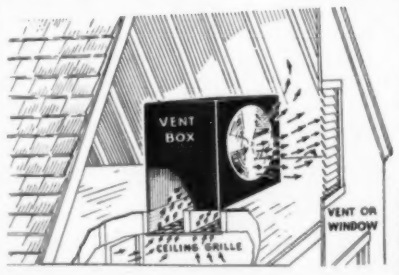
A complete line of both pressure and bottle types

THERE'S a large and profitable market for water coolers ready and waiting. The Cordley line is ideal for reaching that market . . . the cabinets simple in design, attractive and compact . . . the cooling mechanism efficient, dependable and trouble-free. Best of all, Cordley coolers are easy to sell . . . for they are inexpensive in first cost and easy on the electric bill. Generous margin of profit to dealers. Ask us for full information. Cordley & Hayes, 141 Hudson St., N.Y.

WATER COOLERS SINCE 1889

ATTIC VENTILATION

Dealers Wanted



An almost unlimited field. A necessary and paying adjunct to an air conditioning franchise.

Territory still Open

INTERNATIONAL ENGINEERING INC.
DAYTON, OHIO, U. S. A.

All-Gas Bungalow Erected in Omaha Utility Offices

OMAHA—An innovation in gas appliance merchandising has been introduced here with the opening of an all-gas bungalow constructed on the main floor of Metropolitan Utilities District's office building.

Serving as headquarters of the utility's home service department, the bungalow will act also as a means of promoting the use of major domestic gas appliances. After being opened to the general public during an introductory period, it will be used for home service demonstrations and for parties sponsored by local women's clubs.

Credited with having sponsored and executed the idea are T. A. Leisen, general manager of the utility; W. J. Barber, assistant general manager; and Frank Landers, sales manager.

The kitchen is a complete workshop for the homemaker, containing everything in gas appliances, including an Electrolux refrigerator. All available wall space is covered with metal cabinets. A modernistic gas range is placed near the kitchen table and the large Monel metal sink. The Electrolux is located at the other end of the work table, a few steps from the range.

The basement is equipped with an automatic water heater, and an automatic gas furnace complete with a blower and filters which circulate the air through the bungalow.

J. C. Wayner Uses One User To Bring in 21 More Sales

PROVIDENCE, R. I.—Most refrigeration men realize that one sale leads to another, when properly followed up—but J. C. Wayner of Edgewood Sales Co., Norge dealer, used the user so effectively that he landed 21 additional orders as a result of the original sale.

Late in 1934, Mr. Wayner sold a 7-cu. ft. Norge to a Mr. Anderson, general manager of the Pierce-Arrow agency in Providence. To Mr. Anderson's seven brothers and sisters, whom he didn't know about when he landed the original order, Mr. Wayner has since sold six refrigerators, two gas ranges, two washing machines, and an ironer.

One of the brothers is office manager for Atlantic Refining Co., and through him Mr. Wayner has sold eight more refrigerators and two oil burners to executives of the company.

Williams Open Appliance Store in Greenville

GREENVILLE, S. C.—Williams for Refrigeration, a new dealership, has opened for business at 213 West Washington St., carrying complete lines of electric refrigerators, washers, ironers, and vacuum cleaners.

W. L. Williams is vice president and sales manager of the company; W. E. Williams is manager of the commercial refrigeration department; J. D. Williams is manager of the service department; and Oscar Landing, treasurer and store manager.

John I. Strange, for several years with the Westinghouse distributor in Asheville, N. C., will have charge of the company's domestic appliance department.

Woodall Joins J. H. Fagan Distributing Organization

MILWAUKEE—James E. Woodall, formerly assistant purchasing agent for the Electrolux sales division of Servel, Inc., is now connected with the J. H. Fagan Co., distributor of gas appliances and water treatment apparatus here.

— SPECIALTY SELLING IDEAS —

Walker, Crosley Merchandise Manager, Tells How Distributor Can Use Records of Sales & Dealer File to Increase Coverage

By G. Earle Walker, Merchandise Manager, Crosley Radio Corp.

MANY sales executives pride themselves upon being realists. They think no salesman can fool them—that no dealer, no customer can pull the wool over their eyes; they feel that they are ingratiating men, but hard-boiled thinkers. Isn't it true, however, that most of us in sales work are, in fact, to a large degree wishful thinkers with an evangelical faith in the ability of words and "pep" talks alone to produce unpredictably high and hoped for sales records?

It is not our thought here to discount the enthusiasm which men must generate within themselves and with which they must inspire others (where would an army be without martial music?) but rather to direct attention to the fact that battles are won, thriving businesses built, governments prosper, and organized endeavor everywhere has as its basis careful, thorough, thoughtful planning.

Strip all of the excess verbiage from your sales conferences and meetings, and you will probably find that increased volume usually depends upon more complete coverage. Obviously, coverage is not the entire answer to successful and increased distribution, but it is an important factor in obtaining it, and one likely to be overlooked.

Show me complete coverage—and nine chances out of 10, I can show you increased volume. Show me at least one dealer in every town, hamlet, or neighborhood in your territory, with some kind of identification of your product in the form of a window or outdoor sign; show me some kind, any kind, of promotional activity by those dealers, whether it be occasional direct mailing pieces, newspaper ads, or direct selling methods—and, I believe I can show you a specialty distributor who is going places.

Unfortunately, individual dealer's sales record forms, county maps, prospect cards and files are pretty prosaic instruments. While you cannot whip up any exceptional enthusiasm for such instruments on the score that they beat all competition, you can use them as a means to translate sales enthusiasm into actual sales.

One of the first steps in obtaining complete coverage is a usable dealer sales record. Such a record, to be of any real value, must

(a) be regularly used;

(b) be readily accessible in some convenient form to the executive in charge of sales as a constant reminder that a volume of business bears relation to the sales attention given to each account;

(c) be designed in a manner that will insure a complete sales picture at a glance;

(d) contain sufficient data to aid all interested executives in determining the most effective manner of directing sales efforts.

The type of usable dealers' sales record which I recommend, and which is illustrated below, is suitable for use in an 8½ x 11-inch three-ringed binder. A card form is not recommended. For sales management purposes the card form seems unsatisfactory since, as a rule, it involves a system installed in the outer or general office instead of the sales executive's office, with the result that a card record usually is inadequately and infrequently used.

(Concluded on Page 21, Column 1)

Crosley Franchised Dealer Sales Record

(Form of 8½ x 11 sheet for usable sales record)

Year.....

Name ..... Address ..... Telephone .....

City ..... Population ..... County ..... State .....

Credit Limit ..... No. Inside Salesmen..... No. Outside Salesmen .....

Nature of Business .....

Date Appointed ..... Radio ..... Refrigerator ..... Washer .....

Name Distributor's Salesman Covering .....

Yearly Potential Volume ..... Radio ..... Refrigerator ..... Washer .....

Special Remarks .....

	REFRIGERATION				RADIO				WASHER			
	Month		To Date		Month		To Date		Month		To Date	
	$ and Cts.	Units	$ and Cts.	Units	$ and Cts.	Units	$ and Cts.	Units	$ and Cts.	Units	$ and Cts.	Units
Jan.												
Feb.												
Mar.												
Apr.												
May												
June												
July												
Aug.												
Sept.												
Oct.												
Nov.												
Dec.												
Total												

Temperature Control in Modern Kitchen Discussed in Foundation's Booklet

NEW YORK CITY—Temperature control in the modern kitchen is the subject of a new brochure prepared by Anne Pierce, consultant in home economics, and recently issued by Temperature Research Foundation of Kelvinator Corp.

Entitled "Kitchen Temperatures," the booklet discusses in detail the contribution of controlled heat and cold to kitchen efficiency and comfort. It is one of a series of booklets on temperature engineering now being published by the Foundation.

Miss Pierce, editor of the Bureau of Chemistry of the United States Department of Agriculture during the formative period of federal food law enforcement, has organized and guided operation of numerous home economics institutes throughout the country. She now writes articles on food and home economics for leading women's publications.

Describing the new freedom afforded the modern housekeeper who uses a planned kitchen, Miss Pierce declares that the housewife is no longer a drudge, but an executive. She must handle the various kitchen appliances intelligently in order that she may get the greatest possible service at the least possible expense.

Proper use of the electric range and refrigerator, the most efficient arrangement of kitchen equipment, and the ventilation and practical decoration of the modern kitchen are dealt with in Miss Pierce's booklet. Nowadays, Miss Pierce says, these things are all considered; the cook's comfort is no longer ignored.

Four specially designed floor plans, demonstrating the most practical arrangement of equipment in kitchens of varying sizes, are featured in this brochure.

"The electric refrigerator is also one of the advance guards on the frontiers of modern dietetics," she declares. "Without it the milk-vegetable-fruit foundation of the diet cannot be safely maintained nor economically carried out."

In conclusion, Miss Pierce points to modern temperature control as one of the fundamental causes of the new standards of modern life.

Kelvinator Plans '37 Range & Water Heater Promotion

DETROIT—Plans for Kelvinator's 1937 range and water heater promotion were made at a conference of factory officials and field supervisors held here Mar. 1 to 4. Henry W. Burritt, vice president in charge of sales, and Pierre L. Miles, sales manager of the range and water heater division, directed the conference.

Speakers at the meeting, in addition to Messrs. Burritt and Miles, included Miss Frances Weedman, director of Kelvin Kitchen; Godfrey Strelinger, assistant to the vice president in charge of sales; Sam C. Mitchell, director of advertising and sales promotion, Charles M. Lake, and William H. Hanna.

Hecht Co. Moves Refrigeration Department to Main Store

BALTIMORE—Hecht Bros. Co., department store, has moved its refrigerator department to the second floor of its main store at Baltimore & Pine Sts. The department is managed by Frank Kahn.

— SPECIALTY SELLING IDEAS —

How 'Bring 'Em Back Alive' File Builds Distributor Efficiency Told by Walker

(*Concluded from Page 20, Column 5*)

A careful study of the form suggested will reveal that it comes as near to placing the sales manager in a dealer's store as can be done without his actual physical presence there. Visualize for yourself the value of the form in determining the most economical and potentially successful manner of conducting sales promotions, of utilizing factory or special representatives' time.

Suppose a factory representative is to spend several days with you—in connection with a new factory promotion. Even without a usable sales record, you can make a gesture and suggest that he spend the day with this or that salesman, but the probabilities are that out of 15 calls, actually only two will be good prospects for the promotion.

Contrast this with the study of a usable sales record by the sales executive and the factory representative. From such a record, intelligent use can be made of the time of all the principals involved—the dealer, the distributor's salesman, the factory representative.

Promotions for the benefit of all concerned must be conducted where they are most practicable and will do the most good. A more usable sales record makes those objectives possible, provides the sales executive with a constant awareness of precisely what, in a sales way, is happening in each outlet where he has coverage.

It is of equal importance to know what is **not** happening in your retail outlets as to know what is. A usable sales record is a constant reminder to the sales executive of the activities of the accounts which are established.

Next problem in complete coverage is to know accurately where, that is, in precisely what towns and neighborhoods there is representation, and more particularly, where there is no representation. Like the usable dealers' sales record, this information should be conveniently and visibly available in the sales executive's office at all times.

I venture to predict that many a sales executive thinks he has complete coverage, but that when pinned down to concrete examples, will acknowledge that he is just guessing.

I recall one recent case where a distributor sales executive assured me that he had complete coverage in a certain county; whereas, an analysis of the facts, requiring considerable time because he had no factual and accessible record, revealed this picture in a county having a population of 162,311:

There was a total of 18 communities, with populations ranging from 92 to 63,797.

It was found that there was dealer representation in eight communities.

This representation consisted of 27 dealers, 13 of whom were in one community having a population of 63,797.

There was no representation in one community having a population of 9,000; and in nine communities having a population of 2,000 to 4,200.

It is my belief that it would pay many a sales executive to organize a safari into the uncovered wilderness of his own territory. Very little equipment is required — a set of county maps of the territory (the loose-leaf county maps manufactured by the Chas. D. Hevenor Co., Inc., of Buffalo, N. Y., are recommended) and a "Bring 'Em Back Alive File."

To some, a "Bring 'Em Back Alive File" might be just another name for a prospect file, but everybody has had a prospect file at one time or another—only, like sound advice, it probably never was used.

A "Bring 'Em Back Alive File," of course, is a prospect file, but we give it a different name—and in so doing, perhaps endow it with a new meaning, a new vitality, a new use, and a new life. We give it color, a little imagination, a new importance, and possibly a new interest.

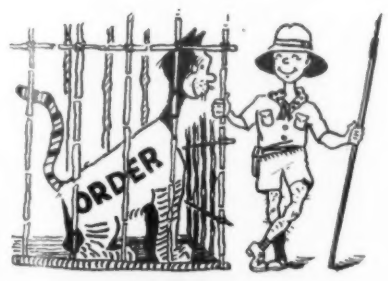
A "Bring 'Em Back Alive" (and this is elementary) is geographically indexed according to the communities or neighborhoods in which there is no representation, as determined from the use of the usable dealers' sales record and the county maps. Behind each index there is a card record (sample shown below), which tells you just as completely what you have not done and what should be done, as the individual sales record reveals what you have accomplished.

The file is small, compact, and should be kept in the sales executive's office. It is a workable record meant to be used and thumbed over—it is the mirror of the things you have not done. Often, the things you have not done are as important as those which you have—sometimes they make the difference between success and failure, between mediocre profit and real profit and real progress.

I am not suggesting that the forms illustrated are definitive; no doubt they can be improved upon and made more effective. The point is, that they have been used successfully, do work. The objective has been to point out that fundamentals of management are still important. And may no distributor's sales executive have peace until he recognizes this fact and works for complete coverage as well as for sales enthusiasm.

Distributors File Card on Prospective Dealers

(About actual size of card recommended)



Bring 'em back alive

Town ..... County ..... State.....

Prospect .....

Address ..... Telephone .....

Whom to Contact .....

Credit ..... Nature of Business.....

No. of Inside Salesmen ..... No. of Outside Salesmen .....

Check degree of Aggressiveness in Advertising and Promotion:

Excellent.....Good.....Just Fair.....

Check desirability as Dealer in Community:

Best.....Good.....Fair.....

Competitive Lines now Handling:

.....Washers —How Long .....

.....Refrigerators—How Long .....

.....Radio —How Long .....

.....Others —How Long .....

BUYER'S GUIDE

SPECIAL RATES APPLY TO THESE COLUMNS ONLY
WRITE ADVERTISING DEPT. FOR FULL INFORMATION

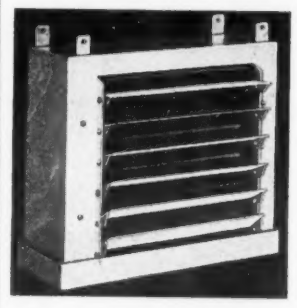
MILLS
COMPRESSORS
for Commercial Use
Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

Get a Gilmer V-Belt
HAS FIVE FEATURES!

1. Top *tension* rubber.
2. Endless pulling cord locked in permanent horizontal plane.
3. Brute-strength bottom rubber.
4. Triple-wear double jacket.
5. Controlled stretch.

Lasts longer. Grips tighter. Stays quiet. Sleeved and plainly sized, for all small-unit equipment. Get catalogue.

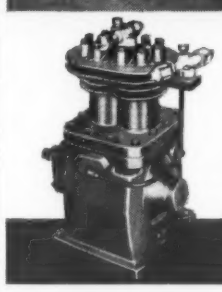
L. H. GILMER CO., Tacony, Philadelphia



UNIT BLOWERS
Pipe Coils
Air-Conditioning Coils
FIN COILS
5/8" — 3/4" — 1"
Steel or Copper
REMPE COMPANY
340 N. Sacramento Blvd. Chicago, Illinois
REMPE

DITLEVSEN & COMPANY, Inc.
75 West Street, New York, N. Y.
CONDENSING UNITS from ¼ to 2 H.P. Air and Water Cooled.
BARE COMPRESSORS
DIRECT DRIVE CONDENSING UNIT ⅛ H.P. with exceptional capacity for household refrigerators. Particularly recommended for replacement of obsolete hermetic units.
1½ h.p. Water Cooled Unit
Attractive Prices Write for Details

REPLACEMENT COMPRESSORS for All Standard ICE CREAM CABINETS



Bare Compressors and complete units (with or without motor and controls) especially adapted to ice cream cabinet installation and for replacement on all standard makes of flooded type or dry expansion systems.
Write for new catalog.
M&E EST. 1866
MERCHANT & EVANS COMPANY
Philadelphia, Pa., U. S. A., Plant at Lancaster, Pa.

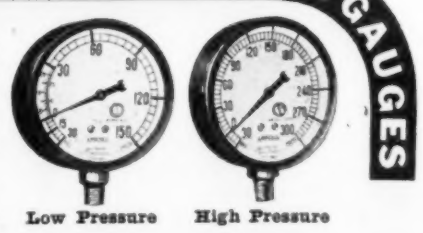
Model No. 500-A

"CHIEFTAIN"
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS
All bearings diamond bored. Positive lubrication of parts by newly developed process plus forced feed lubrication in all models.
Sizes: 1/6, 1/5, 1/4, 1/3 h.p.
Write for prices
TECUMSEH PRODUCTS CO.
Tecumseh, Mich.

OFFICES
New York
480 Lexington Ave.
Chicago
Room 2258
La Salle-Wacker Building
Detroit Export Department
1002 Palms Bldg.
Los Angeles
122 Mariposa St.
St. Louis
577 Arcade Bldg.

TAKE A LOOK AT THESE AMMONIA GAUGES

Both manufacturer and service man appreciate the many superior features of Marsh ammonia gauges. First there is the patented stabilizer that protects against sudden impact, shock, or pulsating pressures. Then there is the recalibrator which makes it possible to actually recalibrate the gauge with a simple screw driver adjustment . . . and then the patented dial arrangement which provides easily read 1 lb. divisions in the low pressure operating range.



Low Pressure High Pressure

JAS. P. MARSH CORPORATION
2067 Southport Avenue, Chicago, Ill.
MARSH Refrigeration Instruments

BUYER'S GUIDE

SUPPLIERS WHO SPECIALIZE IN SERVICE TO THE REFRIGERATION AND AIR CONDITIONING INDUSTRIES

HIGHEST **Filtrine** EFFICIENCY

WATER COOLERS

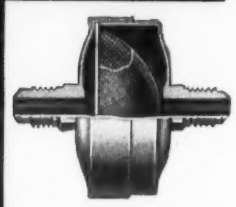
COMMERCIAL — AIR CONDITIONING

From 2 gals. per hour to 500 gals. per minute

WATER FILTERS — STEEL PIPE COILS — SURGE TANKS

FILTRINE MFG. CO., Brooklyn, N. Y.

HENRY



Small Strainer

TYPE 890

Hemispherical screen has 70% more capacity than usual flat disc. Soldered brass shell. 120 mesh brass screen with No. 10 mesh brass screen reinforcement. Screen area, 4 sq. in. O. D. of shell 2 in. Weight 4 oz. List Price **$2.60**

Write for Catalog 62: Dryers, Strainers, Valves and Service Tools.

HENRY VALVE CO. 1001-19 N. SPAULDING AVE. CHICAGO, ILL.

Stocked By Leading Jobbers

"THERMO" FIN COILS

FOR COMMERCIAL REFRIGERATION AND AIR CONDITIONING

WRITE FOR NEW 1937 CATALOG

AVAILABLE WITH

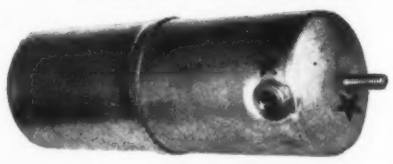
COPPER TUBES - ALUMINUM FINS
COPPER TUBES - COPPER FINS
COPPER TUBES - STEEL FINS
STEEL TUBES -STEEL FINS

MANUFACTURERS FIN COIL COMPANY

2505-7 So. Pulaski Rd. Chicago, Illinois

BRAZED IN CONTROLLED ATMOSPHERE

This receiver tank is made with special stampings brazed ★ in a controlled atmosphere electric furnace. This process is the newest of our facilities for producing Pressed Metal Products. We furnish stampings, assemblies, hydrogen brazing and enameling. Stamped compressor bases are one of the many items we supply. Check us for prices.



Acklin

THE ACKLIN STAMPING CO.
Toledo, Ohio Chicago, Illinois
Detroit, 2-165 General Motors Bldg.

Low Initial Cost

NETCO MILK COOLER

COOLS MILK TO 50° IN 1 HOUR
ECONOMICAL—DEPENDABLE

Low Cost Operation

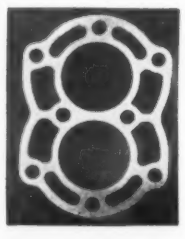
No Installation Cost—Requires Less Service—Exclusive Mechanical Agitation—Operates in Any Cooling Tank—Suitable for 4-6-8 Can Size Tanks—Furnished With or Without Cabinet.

The most mechanically perfect Milk Cooler ever developed.

Thousands satisfied Users. NETCO Milk Coolers have met the test of time; now in its fifth year serving the Dairy Farmer. Send for free Folder. See your nearest NETCO Dealer.

DEALERS WANTED Exclusive Arrangement for good Territory open for Live Dealers. Write for Proposition.

National Electric Tool Co., Dept. R. N., Chicago, Ill.



PIONEERS and SPECIALISTS in

GASKETS for ELECTRIC » » REFRIGERATION

offer you Metallic Gaskets that hold regardless of what your refrigerant may be and will not shed particles of material to clog up important working parts in a machine. A metal that will not "creep." Once tight it will stay "tight."

"Send for NEW complete catalog"

CHICAGO-WILCOX MFG. CO.

7701 S. AVALON AVE. • • CHICAGO, ILL.

UNIT COOLERS

CONTROLLED HUMIDITY

WRITE FOR LITERATURE

JACKSON **ACME INDUSTRIES, Inc.** MICHIGAN

Crowds View General Electric Home in Colorado Springs

COLORADO SPRINGS, Colo.—Air-conditioned, and equipped throughout with General Electric appliances, a prefabricated version of the "House of Tomorrow" attracted hundreds of this city's residents while it was displayed here during January by the Merchants Investment Co.

The house was designed and fabricated by General Houses, Inc., Chicago, erected by Merchants Investment Co., and fitted with G-E equipment, including air-conditioning equipment, automatic furnace, washer, ironer, refrigerator, range, dishwasher, radio, and small appliances, by the Majestic Electric Co., whose president Simon Hale arranged for the installation.

According to Mrs. Purdy, real estate director of the Merchants Investment Co., the house is one of approximately 200 models from which the purchaser can choose.

"The houses are priced on a par with a well-constructed frame house, and sold completely erected and equipped and ready for occupancy," Mrs. Purdy said.

The houses are constructed so that all structural loads are carried on steel, stated W. E. Medlock, president of the investment firm. Exterior walls of asbestos cement, are claimed to be fireproof and impervious to the elements. Inside finish of the house is of painted plywood.

The FHA has approved the construction of the prefabricated houses for insured mortgage purposes, the investment company president states.

— PATENTS —

Issued Feb. 23, 1937

2,071,366. FABRICATED STRUCTURE FOR AIR CONDITIONING UNITS. Alfred Weiland, Philadelphia, Pa., assignor to Baldwin-Southwark Corp. Application June 29, 1933, Serial No. 678,242. 23 Claims. (Cl. 62—129)

2,071,410. FREEZING, MIXING, AND CHOPPING MACHINE. Lee H. Kuhn and Gilbert W. Hart, Lincoln, Nebr. Application June 11, 1935, Serial No. 26,083. 3 Claims. (Cl. 259—110)

2,071,465. FREEZING APPARATUS. Joseph Huber, Freising, Germany. Application May 2, 1933, Serial No. 668,925. In Germany May 17, 1932. 11 Claims. (Cl. 62—105)

2,071,509. COOLING SYSTEM. William Lyle Dudley, Seattle, Wash. Application May 13, 1935, Serial No. 21,229. 3 Claims. (Cl. 261—11)

2,071,631. WATER PURIFYING AND COOLING SYSTEM. William R. Hildebrand, Chicago, Ill. Application Mar. 3, 1933, Serial No. 659,471. 5 Claims. (Cl. 210—99)

2,071,798. REFRIGERATION. James N. Lewis, Columbus, Ohio, assignor to Lewis Refrigeration, Inc., Columbus. Application Mar. 8, 1934, Serial No. 714,577. 5 Claims. (Cl. 62—91.5)

2,071,801. HEATING AND COOLING SYSTEM. Theodore M. Rust and David T. Craft, Norfolk, Va. Application Mar. 5, 1936, Serial No. 67,399. 3 Claims. (Cl. 237—48)

2,071,806. AIR FILTER FOR VENTILATING SYSTEMS OR APPARATUS. Russell S. Walker, Duluth, Minn., assignor to Universal Air Filter Corp., Duluth, Minn. Application Apr. 6, 1936, Serial No. 72,903. 3 Claims. (Cl. 183—71)

2,071,904. DIRECT READING COMFORTABLE TEMPERATURE INDICATOR. Wilfred Shurtleff, Moline, Ill., assignor to The Herman Nelson Corp., Moline, Ill. Original application Dec. 29, 1930, Serial No. 505,294. Divided and this application June 3, 1935, Serial No. 24,598. 4 Claims. (Cl. 73—24)

2,071,935. CONTROL FOR REFRIGERATING SYSTEMS. Glenn Muffly, Scarsdale, N. Y., assignor, by mesne assignments, to Copeland Refrigeration Corp., Mount Clemens, Mich. Application Dec. 31, 1928, Serial No. 329,396. Renewed Nov. 25, 1933. 1 Claim. (Cl. 62—8)

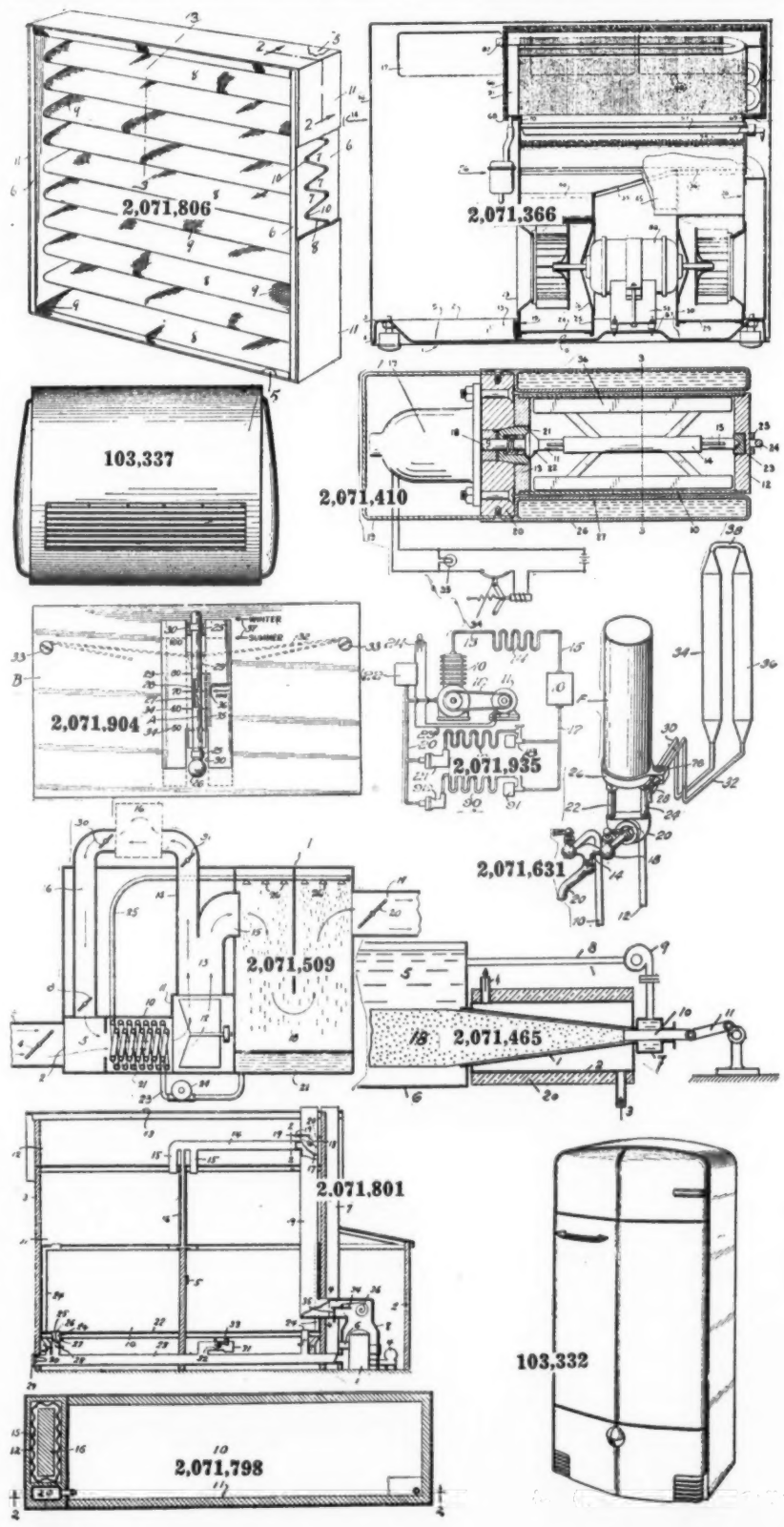
DESIGNS

103,332. DESIGN FOR A REFRIGERATOR. Raymond Loewy, New York, N. Y., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York. Application Nov. 16, 1936, Serial No. 65,919. Term of patent 7 years.

103,337. DESIGN FOR A VEHICLE ROOF MOUNTED AIR CONDITIONER OR SIMILAR ARTICLE. Ralph F. Peo, Buffalo, N. Y., assignor to Houde Engineering Corp., Buffalo, N. Y. Application Dec. 3, 1936, Serial No. 66,289. Term of patent 7 years.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



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YOUNG MAN 26 years old. Several years' experience in refrigeration installation engineering and service maintenance. Knows latest controls, automatic heating stokers and oil burners. Graduate of Utilities Engineering Institute of Refrigeration of Chicago. Desires connections with manufacturer or dealer in refrigeration sales engineering, installation, or service. Box 910, Air Conditioning and Refrigeration News.

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AIR COOLED condensers 9"x10½" double row. New $1.19. Three blade fan pulleys 7⅜", 2½" A groove, ½" bore $0.39. 8"x3" oval end receivers with valve, mounting bolt in bottom, inlet ftg. in top $1.19. Without valve $0.79. Tag controls, old style, but new, less plates $1.95 each. Penn type L, low side controls, specify settings desired, $3.25 each. REFRIGERATION PRODUCTS, INC., 122 W. Illinois St., Chicago.

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MAJESTIC and General Electric units, rebuilt or exchanged. Any model Majestic $18.50. G.E. household models $25.00. Standard Majestic pumps, rebuilt or exchanged $4.95. Prices f.o.b. our factory with a six month guarantee. REFRIGERATION PRODUCTS, INC., 122 W. Illinois St., Chicago.

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MAJESTIC — GENERAL ELECTRIC — SERVEL hermetic units repaired and exchanged. Majestic—$20.50—General Electric—$25.00—Servel—$18.50 F.O.B. our factory. One year unconditional guarantee. Every unit undergoes complete tests for temperature, cycling, wattage consumption and quietness on genuine test equipment. See our advertisement this issue under "Buyer's Guide". REFRIGERATION MAINTENANCE CORP., 365 E. Illinois St., Chicago, Ill.

GENERAL ELECTRIC and Majestic hermetically sealed units repaired and exchanged. Guaranteed work. Wholesale only. Give model when writing. All prices quoted f.o.b. Chicago. AMERICAN REFRIGERATING ENGINEERS, INC., 2257 Silverton Drive, Chicago, Illinois.

EXPANSION VALVES, rebuilt or exchanged: Detroit, Fedders, American Injector, automatic $1.75; thermostatic $3.25. Mayson automatic $1.00. Household cold controls rebuilt or exchanged (modern types only) $2.25. REFRIGERATION PRODUCTS, INC., 122 W. Illinois St., Chicago, Ill.

SCHOOLS

ATTENTION, SERVICE MEN! Write for particulars concerning our extension course designed especially to give you a thorough knowledge of the technical part of refrigeration and air conditioning. For men with no refrigeration experience, we recommend our resident course. DETROIT SCHOOL OF REFRIGERATION AND AIR CONDITIONING, 4125 Grand River Ave., Detroit, Mich.

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REFRIGERATION SUPPLY JOBBER ACTIVITIES

Montreal Firm Opens Jobbing Subsidiary

MONTREAL, Quebec, Canada—Modern Household Appliances, Ltd., manufacturer's representative and distributor of electrical appliances, has opened a subsidiary company, Airco Refrigeration Parts, Reg'd, to act as jobber of refrigeration parts and accessories throughout Canada.

Located at 708 Aqueduct St., in Montreal's business center, the new outlet is under the direction of Paul Boucher, with A. Brown as sales manager. It is a member of National Refrigeration Supply Jobbers Association, Modern Household Appliances having transferred its membership in the American organization to its new subsidiary.

In the future, the parent company will stop counter sales, and act only as manufacturer's agent for the U. S. companies it represents, according to H. M. Milne, sales manager. These include Rotary Seal Co., Kellogg Compressor Mfg. Co., Cutler-Hammer, Inc., Dole Mfg. Co., Mayson Valve Co., Perfection Refrigeration Parts Co., Jas. P. Marsh Co., and others.

Under the new arrangement, Modern Household Appliances will act only as agent, and Airco as jobber. The company will cover all of Canada, Mr. Milne says, and has a 150-page parts catalog ready for distribution to dealers and service men throughout its territory.

The Canadian market is growing rapidly in importance, Mr. Milne says, and organization of the Airco subsidiary firm was in the nature of a change in policy designed to place Canadian jobbing practices on a plane comparable with that which they now occupy in the United States.

Previously, the parent firm had raised its distribution standards to include only automotive accessory stores and the larger service outlets, seeking to come as near as possible to U. S. standards as advocated by Refrigeration Supplies Jobbers Association.

A prime purpose behind the new jobbing outlet, Mr. Milne says, is to show the Canadian trade that there is a real opportunity in that country for an organization operating along lines of procedure already proved successful in the United States.

Jamita Co., New Jacksonville Jobber, Begins Operations In Southern Territory

JACKSONVILLE, Fla.—The Jamita Co., a refrigeration and air-conditioning jobbing firm, has been opened here by Sam Fretz. Ed Barnes will handle counter sales, and Walter Wright will cover the southern territory, including Florida and neighboring states.

Mr. Fretz was once in charge of the refrigeration supply department of Fretz Brass & Copper Co., Philadelphia, and later managed the Philadelphia operations of Melchior, Armstrong, Dessau Co. Mr. Wright was formerly southern representative for Melchior, Armstrong, Dessau.

The Jamita Co. handles the products of Kerotest Mfg. Co., Ansul Chemical Co., L. H. Gilmer Co., U. S. Gauge Co., Bonney Forge & Tool Co., Fedders Mfg. Co., Ranco, Inc., Rotary Seal Co., Weksler Thermometer Corp., Wolverine Tube Co., Imperial Brass Mfg. Co., and Standard Commercial Body Corp.

Geare Speaks on V-Belts at Debes-Sponsored Meeting

CLEVELAND—R. E. Geare, vice president of L. H. Gilmer Co., discussed V-belts before a group of local refrigeration engineers and service men Mar. 12 at Hotel Sterling here.

The meeting was sponsored by Debes & Co., distributor of refrigeration equipment and supplies. Mr. Geare has made previous addresses at Kansas City, Chicago, and Detroit, as well as at the Memphis, Tenn., convention of Refrigeration Engineers' Service Society.

Jobber Association Members Total 80

(*Concluded from Page 1, Column 3*)

Copper Products, Inc., Oklahoma City, McKinley Refrigeration Supply Co., Ft. Worth, Texas; Modern Household Appliances, Ltd., Montreal, Quebec, Canada.

J. M. Oberc, Inc., Detroit; Wm. M. Orr Co., Pittsburgh; Pacific Metals Co., Ltd., San Francisco; Paramount Electrical Supply, New York City; Parsons Brothers, Bridgeport, Conn.; M. D. Patterson Co., Atlanta, Ga.; C. P. Payson Co., Springfield, Mass.; Railway & Engineering Specialties, Montreal, Canada; Refrigeration & Ind. Supply, Minneapolis.

Refrigeration Parts Exchange, Los Angeles; Refrigeration Supplies Co., Ltd., London, Ontario, Canada; Refrigeration Supply Co., Washington, D. C.; Refrigeration Supply Co., Sioux City, Iowa; Refrigeration Supply Co., Brookline, Mass.; Refrigeration Supply Co., Harrisburg, Pa.; Refrigerative Supply Co., Seattle, Wash.; Refrig. Supply Distributors, Los Angeles; Refrigeration Equipment Co., Honolulu, T. H.

Republic Electric Co., Davenport, Iowa; Rhode Island Supply & Eng. Co., Providence, R. I.; Root, Neal & Co., Buffalo; Ruegg Refrigeration Supply, Lincoln, Neb.; Service Supply Co., Binghamton, N. Y.; The Spangler Co., St. Louis; Standard Refrigeration Parts, Chicago.

Standard Supply, Inc., Worcester, Mass.; S. W. H. Supply Co., Louisville, Ky.; Teague Hardware Co., Montgomery, Ala.; Thermal Service Co., Inc., St. Paul, Minn.; R. E. Thompson Co., St. Louis; United Electric Service Co., Wichita Falls, Texas; United Refrigerator Supply Co., Memphis, Tenn.; United States Electric Co., Springfield, Ill.; United Supply Co., Omaha, Neb.

Victor Sales Corp., Philadelphia; Vincent Brass & Copper Co., Minneapolis, Minn.; Walter Ref. Supply Co., Houston, Texas; Westbrook Carburetor Elec. Co., San Antonio, Texas; Williams and Co., Inc., Pittsburgh; Young Supply Co., Detroit.

California Jobber Receives Strange Rush Order

SAN FRANCISCO—A jobber of refrigeration equipment can expect orders for almost anything, according to Clarence F. (Sandy) Pratt, president of California Refrigerator Co.

As a case in point, Mr. Pratt cites the rush order recently received by his company for a pair of white coveralls with the well-known circular G-E insignia and the word "Refrigerator" printed on the back. The order was filled.

– AIR CONDITIONING ENGINEERING –

Connecticut Power Co. Air Conditioning System Uses Direct Expansion Cooling Coils & Silica Gel Dehumidifier

NEW LONDON, Conn.—Installation of air-conditioning equipment by the Connecticut Power Co. in their office building here is marked by the fact that the cooling and the dehumidifying functions are completely separated. The cooling effect is accomplished through the agency of the conventional compression type of refrigeration, while dehumidification is taken care of by Silica Gel equipment. In winter the heating function is entirely separate from the system, which heats the remainder of the building.

The room for which the system was installed has an approximate volume of 15,000 cubic feet, normally is occupied by 20 persons, and has one outside wall which consists principally of plate glass windows. Normally about 4 kw. of lighting is used. The space is used by the billing department.

One of the principal problems in the past regarding this room has been to secure adequate ventilation. Heating has presented no problem, as the normal heat leakage from adjoining spaces always has been more than ample.

The summer cooling load was estimated to be equal approximately to five tons of refrigeration effect, this load being about equally divided between sensible work (temperature reduction) and latent work (moisture reduction).

After careful consideration it was decided to accomplish sensible cooling by means of a direct expansion coil served by a conventional compressor type refrigerating unit, and to employ a gas-fired Silica Gel absorption type dehumidifier for drying the air.

For the following reasons, this type of combination system was given preference in the final analysis over the one hundred percent refrigeration method in which low temperature surfaces are employed both for cooling and drying the air:

1. The high percentage of latent work of which the load is composed would necessitate the use of low inefficient suction pressures for the refrigerating unit, and/or the use of "back-heating" in order to prevent over-cooling of the conditioned space by the high degree of cooling which the one hundred percent refrigeration system would be compelled to do in order to accomplish the required dehumidifying effect.

2. In the combination system consisting of refrigeration equipment for cooling, and Silica Gel equipment for drying the air, the cooling function and the drying function are entirely separated. Therefore the cooling and drying effects may be controlled independently of each other so that either is used only when and if it is required. Therefore it is not necessary to cool the air in order to dry it even when cooling is undesirable, as is the case under many conditions when the 100% refrigeration method is employed.

3. The 100% refrigeration system requires a considerably greater connected electric load than does the combination system. This is a very important consideration in view of the very small portion of the year during which dehumidification is desired.

The air distribution system is arranged as follows: both outside air and recirculated air connections are provided. After being drawn through the drying and cooling elements and through the winter heating coils, the air is passed through filters and discharged into the room through a duct system and through the directional type supply grilles located about 9 ft. above the floor. Recirculated air is removed from the room through floor grilles and through ducts. The supply fan is driven by a two-speed motor.

During the summer about 3,000 c.f.m. of air is circulated, of which 600 c.f.m. is outside air. This total air quantity results in approximately 12 air changes per hour. Air supply grilles have been carefully arranged so that good air distribution without drafts results.

The dehumidifier uses Silica Gel, a hard manufactured substance which looks like beach sand, but which is very porous. When moisture air is brought in contact with this substance the pores absorb or condense the moisture much as a sponge takes up water. When the wet Silica Gel is heated, the water is driven off and the dry material is ready to be used over again.

The dehumidifier is divided into two compartments, the air being passed through the compartments in alternate 10-minute periods. Each compartment is dried during its off period by means of air drawn through at high temperature by an exhaust fan which discharges the moisture-laden atmosphere outside the building.

The gas heater and the fan which heat and circulate the flow of both the air which is used for drying and the air to be dried and conditioned, are under automatic control and require no attention. The operation of the dehumidifier is under the automatic control of a room humidistat.

The dehumidifier has a refrigerating effect equal to 2.5 tons, and handles 600 c.f.m. of outside air. This air is dried and added to the 2,400 c.f.m. of air that is recirculated from the conditioned space.

The cooling effect is accomplished by passing the air over the cool surface of a finned type direct expansion coil before it is delivered to the room. The cooling coil is served by a 3-hp. motor driven compressor, which is under the control of a room thermostat, so that it operates only when the room temperature rises above the setting of the thermostat.

During the winter season, the air supply system is used for supplying filtered outside air to the room.

If the temperature of the mixture of outside and recirculated air falls below the setting of the controlling thermostat, an automatic damper is adjusted to pass the air over the surface of a finned type heating coil in such a way that the desired room temperature is maintained. Steam for this heating coil is furnished by a small independent gas-fired boiler.

A humidifier is provided for maintaining the desired humidity in the room during the heating season. This humidifier operates under the control of a room humidistat.

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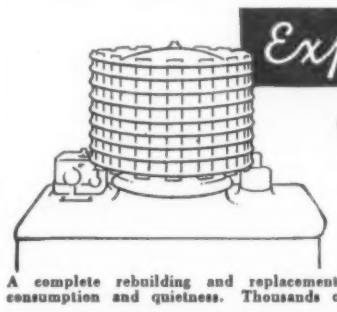
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